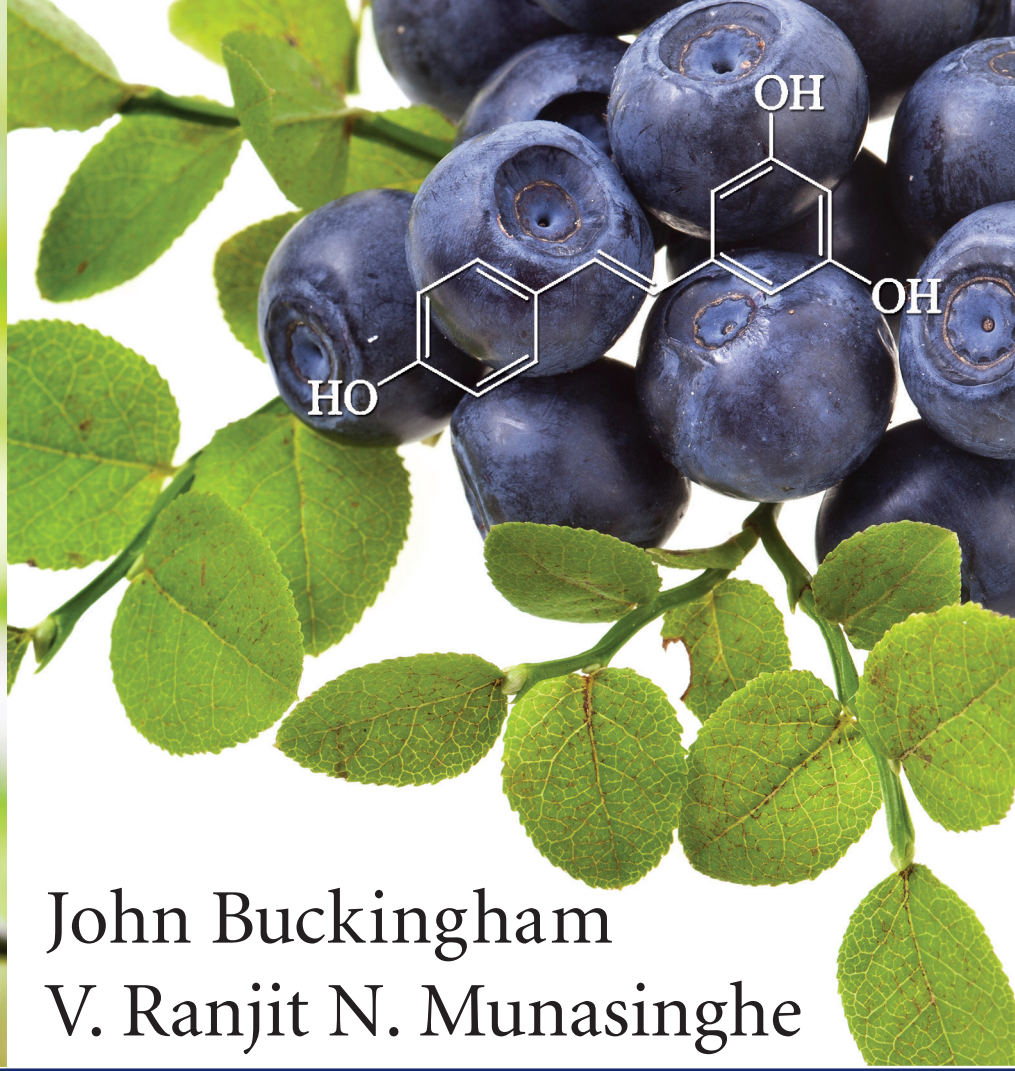
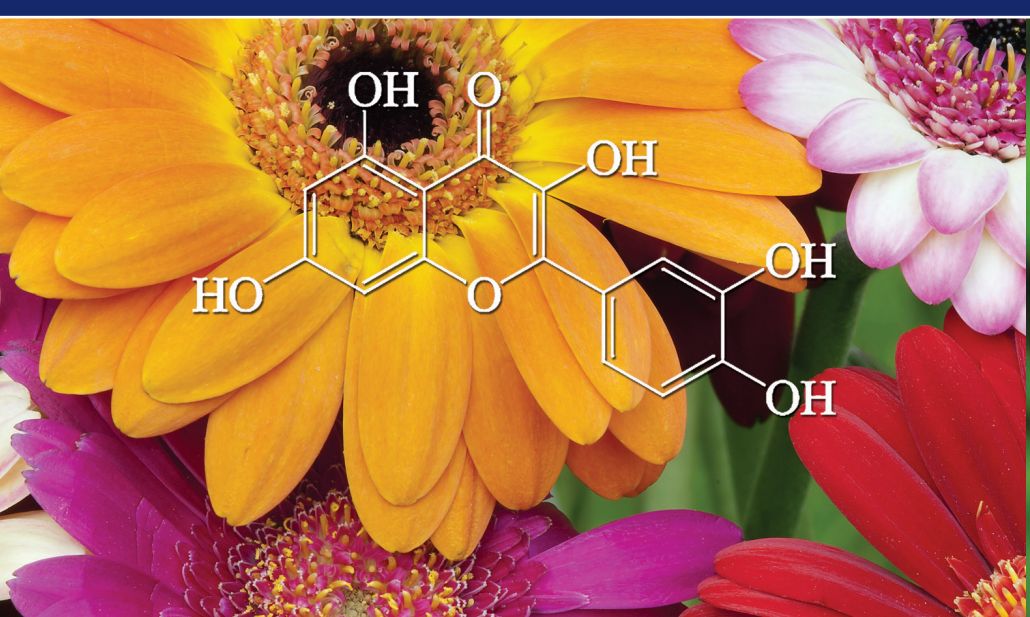


John Buckingham
V. Ranjit N. Munasinghe

Dictionary of Flavonoids

with CD-ROM



CRC Press
Taylor & Francis Group

Dictionary of Flavonoids

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John Buckingham
V. Ranjit N. Munasinghe

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Preface

We are pleased to present this major compilation of an important class of plant metabolites having extensive and growing significance in the practical world. The flavonoids represent the largest group of the non-structural plant metabolites, with the exception of the terpenoids. They have an obvious role as the basis of most plant colours, but in recent years an increasing number of functions within the plant have been linked to the colourless members of the group. Since they represent major components by weight of all food plants, research into their dietary and toxicological properties is of ongoing significance. Nearly 20,000 different flavonoids have now been characterised, some of the simpler compounds of extremely wide occurrence in the plant kingdom, others of more unusual structural type limited to isolation from a single species or genus.

The *Dictionary of Flavonoids* is the latest specialist dictionary to be produced from the CRC (formerly Chapman & Hall) chemical database, a project of more than 30 years' standing, which aims to provide comprehensive and reliable documentation of important chemical compounds, including all natural products. For the production of this Dictionary, the existing database components have been carefully reviewed and updated by a specialist team. The resulting compilation will be essential to all workers in the field, and its accompanying CD version provides powerful search functions that will greatly facilitate their research in the field.

The Editors

The Editors

John Buckingham is a former lecturer in organic chemistry at the University of London. He has been involved with the Chapman & Hall/CRC chemical database since its inception in 1980, initially as a Chapman & Hall employee, more recently as Editorial consultant. From the database has been produced various editions of the *Dictionary of Organic Compounds* and the *Dictionary of Natural Products* (both of which have been for some years solely electronic). In addition, he compiled (with W. Klyne and later with R. A. Hill), two editions and supplements of the *Atlas of Stereochemistry* and has coauthored several other specialist dictionaries in the Chapman & Hall/CRC series.

He is also the author of the popular science books *Chasing the Molecule* and *Bitter Nemesis: the Intimate History of Strychnine.*

V. Ranjit N. Munasinghe was formerly a Senior Lecturer in organic chemistry at the University of Colombo, Sri Lanka, Research officer and visiting lecturer at Birkbeck College, University of London and a Research Fellow at the chemistry department of Imperial College, University of London. He was also a Senior Research Scientific Officer at National Institute for Medical Research (NIMR, MRC), London.

With a BSc from University of Colombo, Sri Lanka, PhD from Birkbeck College (1978), and a DIC from Imperial College, University of London (1994), he has about 40 years of research and teaching experience in organic chemistry. Specialising in carbohydrate chemistry, his main areas of research included photochemical synthesis, deoxy sugars, branched chain sugars, C-glycosides, trisaccharides and fluorescent conjugates of sialic acids.

He has been involved with C&H chemical databases since 1983 and has compiled (with Prof. P.M. Collins) *Carbohydrates* (1987) and *Dictionary of Carbohydrates* (1st Ed. 1998, 2nd Ed. 2006). He was also a consultant and compiler for *Dictionary of Organic Compounds*, *Dictionary of Natural Products* and *Dictionary of Food Compounds* (2nd Ed. 2013).

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Dr John Ward, Consultant

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

Introduction to the *Dictionary of Flavonoids*

DEFINITION OF A FLAVONOID

The flavonoids are a large group of natural products which are widespread in higher plants but also found in mosses and liverworts (and also a sole reported occurrence in a green alga). They occur in all classes of higher plants except the primitive hornworts (Anthocerotae).

The anthocyanidin flavonoids are responsible for flower colour in the majority of angiosperms, but colourless flavonoids are also widespread and abundant. In the early days of flavonoid research, they were considered to be essentially useless by-products of plant metabolism; however, a variety of biological functions within the plant are fulfilled by various members of the series, for example, uv protection, enzyme modulation and protection against infective agents. Many metabolic and extracellular roles remain to be discovered. As major components of the plants which form the foundation of human and animal nutrition, ongoing research into their metabolism and toxicology is of major research interest. They are active contributors to the health benefit of foods, such as fruits, vegetables, tea and red wines, where the activity is mainly associated with their radical-scavenging and antioxidant activities. A few flavonoids such as **Equol** are of interest as secondary animal metabolites of dietary flavonoids. They also have a major importance in chemotaxonomy.

This book, together with its accompanying fully searchable CD database, represents a major and up-to-date summary of all known flavonoids and their literature. In this respect, the *Dictionary of Flavonoids* is complementary to the major monographs on flavonoids which have appeared in recent years and which are noted below.

This Introduction gives only a brief outline of the flavonoid structural types, serving principally as a key to the Type of Compound classification (VK codes) as described more fully in the following sections. The core of the Dictionary is the individual entries with their extensive bibliographies which lead the user into the whole of the flavonoid literature. These entries can be searched by name, substructure, and physical and other properties, as well as by using the Type of Compound codes. Entries also carry Type of Organism codes enabling searches across the various plant families.

OTHER LITERATURE SOURCES

The following major monographs on flavonoids, listed in chronological order, have been published:

The Flavonoids, (eds. Harborne, J.B. *et al*), Chapman and Hall, 1975
The Flavonoids: Advances in Research, (eds. Harborne, J.B. *et al*), Chapman and Hall, 1982
The Flavonoids: Advances in Research Since 1980, (ed. Harborne, J.B.), Chapman and Hall, 1988
The Flavonoids: Advances in Research Since 1986, (ed. Harborne, J.B.), Chapman and Hall, 1994
Flavonoids: Chemistry, Biochemistry and Applications (eds. Andersen, Ø.M. and Markham, K.R.), Taylor and Francis/CRC Press, 2006

In addition the following sources may be useful;

Gabor, M., *The Pharmacology of Benzopyrone Derivatives and Related Compounds*, Akademiai Kiado, 1986
Agrawal, P.K., *Carbon-13 NMR of Flavonoids*, Elsevier, 1989
Dey, P.M. *et al, Methods in Plant Biochemistry, Volume 1: Plant Phenolics*, (ed. Harborne, J.B.), Academic Press, 1989
Donnelly, D.M.X. *et al, Nat. Prod. Rep.*, 1995, **12**, 321–338 (*isoflavonoids*; *neoflavonoids*)
Harborne, J.B. *et al*, *Nat. Prod. Rep.*, 1995, **12**, 639–657 (*anthocyanins*)
Ferreira, D. *et al*, *Nat. Prod. Rep.*, 1996, **13**, 411–433 (*proanthocyanidins*)
Barron, D. *et al, Phytochemistry*, 1996, **43**, 921–982 (*isoprenylated flavonoids*)
Mabry, T.J. *et al, The Systematic Identification of Flavonoids*, Springer, 2014 (*print-on-demand*)

Also, numerous books have been published on dietary aspects. There are many references given in individual entries on dietary and other biochemical aspects of individual flavonoids.

EVOLUTION OF THE *DICTIONARY OF FLAVONOIDS*

This Dictionary forms part of the CRC Press Chemical Database, of which a major component is the *Dictionary of Natural Products* (DNP). Starting in the early 1980s, the database has evolved and enlarged to become a comprehensive record of known natural products. The database is continually updated, and is publicly re-released biannually in DVD and online format.

In producing the *Dictionary of Flavonoids*, a specialist team has reviewed, updated and, where necessary, expanded the relevant entries from the DNP database. The expansion which has been undertaken has been in the direction of increased documentation of flavonoid isolations, food and other uses, and bibliography, particularly for the more widespread compounds.

Further editions of the *Dictionary of Flavonoids* will be published at intervals, but in the meantime, ongoing updates of the dataset represented by this Dictionary will be through the medium of the six-monthly releases of DNP. For further information on how to subscribe, please contact e-reference@taylorandfrancis.com.

CLASSIFICATION OF FLAVONOIDS

Flavonoids can be classified according to their biosynthetic origin. The pathways leading to the flavonoids are part of the general phenylpropanoid biosynthetic scheme, which also leads to a wide range of other secondary metabolites such as the lignans and stilbenoids. Some flavonoid types are both intermediates in biosynthesis as well as end-products, which can accumulate in plant tissues. These include chalcones (the first formed C_{15} structure derived from malonyl coenzyme A and *p*-coumaryl coenzyme A), flavanones, flavanon-3-ols and flavan-3,4-diols. Other classes are only known as end-products of biosynthesis, e.g. anthocyanins, flavones and flavonols. Two further classes of flavonoid are those in which the 2-phenyl sidechain of a flavonoid isomerises to the 3-position (giving rise to isoflavones and related isoflavonoids) and then to the 4-position (giving rise to the neoflavonoids).

A further subdivision can be made according to whether the central heterocyclic ring is unsaturated or saturated. When unsaturation is present, as in the anthocyanins, flavones and flavonols, the molecule is achiral and essentially planar (occasionally distorted, e.g. by the substitution of the 2′-hydroxyl group in a 3-*O*-methylflavonol). Saturated flavonoids (flavanones, flavans) have one or more chiral centres. Optical activity may also be present in flavonoids due to the presence of glycosidic substituents.

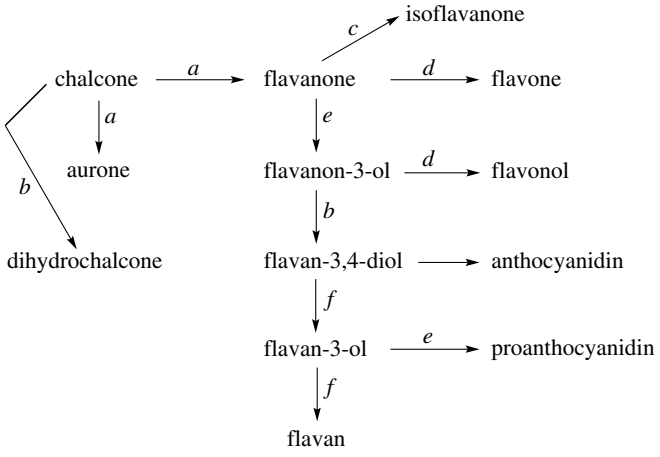


Fig. 1 Biosynthetic relationship of flavonoids
a = cyclisation, *b* = bioreduction, *c* = aryl migration, *d* = dehydrogenation, *e* = hydroxylation, *f* = dehydroxylation

(A more detailed scheme together with information on the genomics and enzymology of the pathways is given in Andersen and Markham, p. 150)

The majority of flavonoids are monomeric, but an increasing number of dimeric and oligomeric structures are being described. Most biflavonoids are based on carbon-carbon linking of two similar flavone units, but mixed

dimers (e.g. flavonylflavanones) are known. The highest molecular weight flavonoids are the oligomeric and polymeric proanthocyanidins, derived biosynthetically from flavan-3-ols.

Most flavonoids occur naturally associated with sugars in conjugated form and, within any one class, may be characterised as monoglycosidic, diglycosidic, etc. Glycosidic complexity is considerable. Mono-, di and trisaccharides may be linked through a phenolic hydroxyl; and one or more such *OH* groups may carry a sugar substitution. Acylated *O*-glycosides are known, where aromatic or aliphatic acids are linked through a sugar *OH* group. Sulfated conjugates are common in the flavone and flavonol series, where the sulfation may be on a phenolic hydroxyl and/or on an aliphatic hydroxyl of a glycoside moiety.

Some glycosides isolated in the course of earlier work were only partially characterised structurally and some may or may not be identical with fully characterised glycosides isolated later. Details are given in the individual entries.

A fairly considerable number of *C*-glycosylated flavonoids, mostly flavones, occur naturally and are widely distributed throughout the plant kingdom. They commonly have one or two sugar residues directly linked by a carbon-carbon bond at the *C*-1 of the sugar to the 6- or 8-position of the flavone nucleus and are readily distinguished from *O*-glycosides by their resistance to acid hydrolysis. Thus, the flavone, Apigenin, can occur with a glucose at *C*-6 (**Isovitexin**) or at *C*-8 (**Vitexin**) or at both *C*-6 and *C*-8 (**Vicenin 2**). Other apigenin *C*-glycosides are known with a variety of carbon-linked sugars including arabinose, glucose, rhamnose, galactose and xylose. *C*-Glycosides of flavones commonly occur *O*-glycosylated. These compounds readily lose their *O*-linked sugar(s) on acid hydrolysis. Such *O*-glycosidic residues may be attached either to a hydroxyl of the *C*-sugar or directly to one of the free phenolic groups. Acylated *C*-glycosides have been described, e.g. the 2″-*p*-coumarate of Vitexin.

NOMENCLATURE

(1) Systematic and Semisystematic Names

Owing to a fair degree of structural homogeneity, the nomenclature of most flavonoids is relatively straightforward. Flavonoids can be given fully systematic names based on heterocyclic nomenclature (e.g. flavone = 2-Phenyl-4*H*-1-benzopyran-4-one) which in CAS, since the introduction of 9CI nomenclature in 1972, has been given precedence over the older semisystematic scheme based on flavone, isoflavone, etc. However, the older system is simpler and more intuitive and continues to be favoured by nearly all workers in the flavonoid field. A major disadvantage of CAS nomenclature is that closely related flavonoids may index very differently, for example, in the case of the common methylenedioxy compounds.

The following list tabulates the parent systematic stem names for the major classes of flavonoid.

Flavonoid name	***Systematic equivalent***
Aurone	2-(Phenylmethylene)-3(2*H*)-benzofuranone
Chalcone	1,3-Diphenyl-2-propen-1-one
Chroman	3,4-Dihydro-2*H*-1-benzopyran
Coumarin	2*H*-1-Benzopyran-2-one
Coumestan	6*H*-Benzofuro[3,2-*c*][1]benzopyran-6-one
Dihydrochalcone	1,3-Diphenylpropan-1-one
Dihydroflavonol	2,3-Dihydro-3-hydroxy-2-phenyl-4*H*-1-benzopyran-4-one
Flavan	3,4-Dihydro-2-phenyl-2*H*-1-benzopyran
Flavan-3-ol	3,4-Dihydro-2-phenyl-2*H*-1-benzopyran-3-ol
Flavan-3,4-diol	3,4-Dihydro-2-phenyl-2*H*-1-benzopyran-3,4-diol
Flavanone	2,3-Dihydro-2-phenyl-4*H*-1-benzopyran-4-one
Flavone	2-Phenyl-4*H*-1-benzopyran-4-one
Flavonol	3-Hydroxy-2-phenyl-4*H*-1-benzopyran-4-one
Flavylium	2-Phenyl-1-benzopyrilium
Isocoumarin	1*H*-2-Benzopyran-1-one
Isoflavan	3,4-Dihydro-3-phenyl-2*H*-1-benzopyran
Isoflavanone	2,3-Dihydro-3-phenyl-4*H*-1-benzopyran-4-one
Isoflavone	3-Phenyl-4*H*-1-benzopyran-4-one
Peltogynan	[2]Benzopyrano[4,3-*b*][1]benzopyran
Pterocarpan	6*a*,11*a*-Dihydro-6*H*-benzofuro[3,2-*c*][1]benzopyran

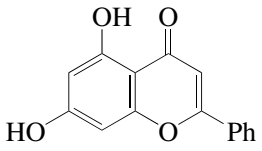
(2) Trivial Names

Many flavonoids also have trivial names by which they are widely known, mostly derived from the botanical binomial of the species from which first isolated. The Dictionary aims to give a comprehensive coverage of these trivial names. There are numerous duplications of trivial names in the literature, both between different flavonoids and between flavonoids and other classes of natural product. For example, there are six Odoratin(e)s in the literature, three of them flavonoids, two terpenoids and one alkaloid. Such duplicate names are marked with the symbol ‡.

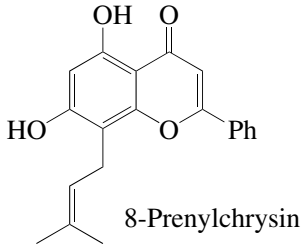
Traditionally, the suffix termination of trivial names indicated the structural class of simple flavonoids. The ending -inidin denoted an anthocyanidin (e.g. **Pelargonidin**) and -etin a flavonol (e.g. **Quercetin**). Attempts have been made in the past to link the trivial names of glycosides to those of the parent aglycone, for example, glycosides of Quercetin have names such as **Quercitrin** (the 3-rhamnoside), **Isoquercitrin** (the 3-glucoside) and **Quercimeritrin** (the 7-glucoside). However, little consistency has been retained over time; the number of glycosides now known of the major flavonoids such as Quercetin is now so great that it has been impossible to adhere to this scheme.

(3) Semitrivial Names

A fourth class of name which occurs widely in the flavonoid literature is the so-called 'semitrivial' names obtained by modifying the trivial name of a parent structure (e.g. Chrysin) with a systematic or semisystematic modifier, e.g. to arrive at the name 8-Prenylchrysin.



Chrysin



8-Prenylchrysin

Such names, although fairly widespread, should be discouraged because of the possibilities they introduce for duplication and ambiguity. Thus (1) the parent structure may have more than one trivial name, (2) the substituent may have several possible names; in the case of prenyl, the forms 3-Methyl-2-butenyl, δ^2-Isopentenyl, γ,γ-Dimethylallyl and Isoprenyl are all found in the (mostly older) literature, and (3) severe difficulties in documentation may be produced if it is later found that the assigned structure is in fact incorrect.

(4) Policy in the Dictionary of Flavonoids

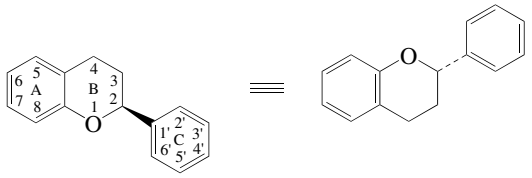
Systematic, semisystematic, trivial and semitrivial names are all given in the Dictionary. Coverage of all these types of name is essentially comprehensive except that systematic (CAS) names are not given throughout, especially for the more complex skeletons. The CAS name for any particular flavonoid can be obtained from the CAS database, if required, by inputting the CAS registry number given in the Dictionary entry.

In choosing the entry heading name, precedence is given to the semisystematic (flavone, isoflavone, etc.) name where practicable. The trivial name may be preferred for complex structures.

DISPLAY AND NUMBERING OF STRUCTURES

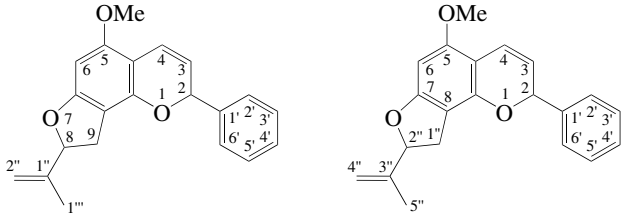
There are two systems of ordering the substituents around the flavan nucleus: one in which the A- and B-ring substituents precede C-ring (primed) substituents (e.g. 3,5,7,3′,4′-pentahydroxyflavone); and one in which the substituents are ordered strictly numerically (e.g. 3,3′,4′,5,7-pentahydroxyflavone). The latter system is more in keeping with IUPAC general numbering conventions and is used throughout this Dictionary.

There are additionally two conventions, both in widespread use, for drawing flavonoid formulae, with the heterocyclic oxygen at the top or at the bottom. The latter is used throughout the Dictionary.



Flavan
3,4-Dihydro-2-phenyl-2*H*-1-benzopyran
S-form shown

In the case of flavonoids containing additional rings (most frequently, additional *O*-heterocyclic rings arising from the cyclisation of a prenyl-type substituent), more than one numbering scheme may be in use. Such compounds can be named based either on systematic numbering of the heterocyclic core or on treating the prenyl residue as a primed substituent as if it were acyclic.



Systematic numbering Flavonoid-derived numbering

Abbottin

Note that in many cases such as Abbottin, no standardised numbering scheme may exist for the side-chain carbons and authors' schemes may differ. The *Dictionary of Flavonoids* may introduce a reasonable scheme. The diagram will be numbered in accordance with this scheme and the data given in the entry will always follow that scheme, even when it differs from the scheme used in one or more of the references given.

Further information about the nomenclature and numbering of each subclass of flavonoid is given below.

ORGANISATION OF DICTIONARY ENTRIES

The scheme by which the data on individual flavonoids is organised into entries should be self-evident by perusing the printed pages. Flavonoids of unusual structure may have their own individual entry, but more frequent is the situation where the glycosides, acyl derivatives and ethers of a parent flavonoid are included as derivatives in the entry for the parent.

Depending on the number of such derivatives, one or more methyl ethers, etc., may be separated off into their own entry which is cross-referenced from the parent. An extreme case is represented by the common flavones such as **Quercetin**, where separate entries have been created for Quercetin 3-glycosides, Quercetin 3,4'-diglycosides, Quercetin 7-glycosides, etc., as well as the various methyl ethers, many of these entries containing hundreds of compounds.

REFERENCES

The bibliography of each entry is labelled with reference tags allowing the ready identification of the key reference for each compound covered by the entry. Further references may refer to general spectroscopic, etc., information and may often refer to several compounds within the entry.

For the less-common flavonoids the bibliography is normally complete. For the more commonly occurring flavonoids, this may not be possible or desirable owing to the large number of reported isolations. In such entries the bibliography refers to key references on characterisation, plus references to isolations from unusual sources, or where the reference contains a bibliography on occurrence, in which case the reference carries the reference tag

(occur). For common flavonoids, source species may be cited in the entry without the corresponding reference being given, in which case the appropriate reference can invariably be traced quickly through other sources (CAS or a web search).

THE TYPE OF COMPOUND (VK) CLASSIFICATION SCHEME

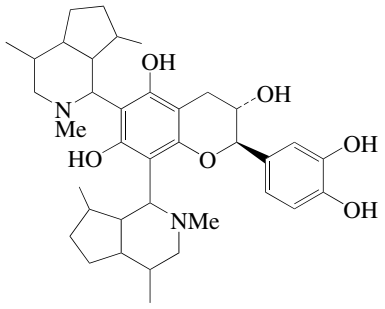
All flavonoids in the Dictionary are described by at least one Type of Compound code. These codes consist of the code letters VK followed by four numbers, thus VK3700, Isoflav-3-enes, VK5060, Flavones; six *O*-substituents.

The following is a list of VK (flavonoid) codes. The main classes are further described in the following sections.

VK0020	Anthocyanidins and anthocyanins; two O substituents
VK0030	Anthocyanidins and anthocyanins; three O substituents
VK0040	Anthocyanidins and anthocyanins; four O substituents
VK0050	Anthocyanidins and anthocyanins; five O substituents
VK0060	Anthocyanidins and anthocyanins; six O substituents
VK0070	Anthocyanidins and anthocyanins; seven O substituents
VK0095	Pyranoanthocyanidins
VK1000	Flavans
VK1100	Flavan-3-ols
VK1200	Leucoanthocyanidins
VK1250	Flavan-4-ols
VK1300	Peltogynoid flavonoids
VK1500	Proanthocyanidin flavonoids
VK2000	Biflavonoids and polyflavonoids
VK3000	Isoflavones; no O substituent
VK3010	Isoflavones; one O substituent
VK3020	Isoflavones; two O substituents
VK3030	Isoflavones; three O substituents
VK3040	Isoflavones; four O substituents
VK3050	Isoflavones; five O substituents
VK3060	Isoflavones; six O substituents
VK3070	Isoflavones; seven O substituents
VK3100	Isoflavanones
VK3200	Simple rotenoid flavonoids
VK3250	12*a*-Hydroxyrotenoid flavonoids
VK3300	Dehydrorotenoid flavonoids
VK3400	Simple pterocarpan flavonoids
VK3450	6*a*-Hydroxypterocarpan flavonoids
VK3500	Pterocarpene flavonoids
VK3550	Pterocarpanone and pterocarpenequinone flavonoids
VK3600	Isoflavans
VK3650	Isoflavanquinones
VK3680	Isoflav-2-enes
VK3700	Isoflav-3-enes
VK3720	3-Arylcoumarin flavonoids
VK3750	Coumestan flavonoids
VK3770	Coumaronochromene flavonoids
VK3800	α-Methyldeoxybenzoin flavonoids
VK3820	2-Arylbenzofuran flavonoids
VK4000	Neoflavonoids
VK5000	Flavones
VK5010	Flavones; one O substituent
VK5020	Flavones; two O substituents
VK5030	Flavones; three O substituents

VK5040	Flavones; four O substituents
VK5050	Flavones; five O substituents
VK5060	Flavones; six O substituents
VK5070	Flavones; seven O substituents
VK5080	Flavones; eight O substituents
VK5220	Flavonols; two O substituents
VK5230	Flavonols; three O substituents
VK5240	Flavonols; four O substituents
VK5250	Flavonols; five O substituents
VK5260	Flavonols; six O substituents
VK5270	Flavonols; seven O substituents
VK5280	Flavonols; eight O substituents
VK6010	Chalcone flavonoids; one O substituent
VK6020	Chalcone flavonoids; two O substituents
VK6030	Chalcone flavonoids; three O substituents
VK6040	Chalcone flavonoids; four O substituents
VK6050	Chalcone flavonoids; five O substituents
VK6060	Chalcone flavonoids; six O substituents
VK6070	Chalcone flavonoids; seven O substituents
VK6080	Chalcone flavonoids; eight O substituents
VK6095	Chalcone flavonoids; α- or β-oxygenated
VK6100	Aurone flavonoids
VK6200	Dihydrochalcone flavonoids
VK6300	Flavanones; no O substituents
VK6310	Flavanones; one O substituent
VK6320	Flavanones; two O substituents
VK6330	Flavanones; three O substituents
VK6340	Flavanones; four O substituents
VK6350	Flavanones; five O substituents
VK6360	Flavanones; six O substituents
VK6370	Flavanones; seven O substituents
VK6380	Flavanones; eight O substituents
VK6410	Dihydroflavonols; one O substituent
VK6420	Dihydroflavonols; two O substituents
VK6430	Dihydroflavonols; three O substituents
VK6440	Dihydroflavonols; four O substituents
VK6450	Dihydroflavonols; five O substituents
VK6460	Dihydroflavonols; six O substituents
VK6470	Dihydroflavonols; seven O substituents
VK6500	Furanoflavonoids
VK6600	1,3-Diarylpropane flavonoids
VK6700	Cinnamylphenol flavonoids
VK6800	Homoisoflavonoids
VK7000	Flavonoid *C*-glycosides
VK8300	Cyclised *C*-polyprenylated flavonoids
VK9000	Miscellaneous modified flavonoids
VK9999	Flavonoids of unknown or partially unknown structure

Where a flavonoid can be considered to belong to two or more flavonoid structural types, it carries all appropriate codes. In addition, some flavonoids carry additional codes not beginning with VK. This means that they are structural hybrids that can be considered to belong also to another class of natural product. For example, **Kopsirachine** carries the alkaloid VX codes VX0350 (flavonoid alkaloids) and VX6300 (sesquiterpene alkaloids) as well as VK1100 (flavan-3-ols). These codes for other classes of natural product are documented and can be searched in the *Dictionary of Natural Products* (DNP).



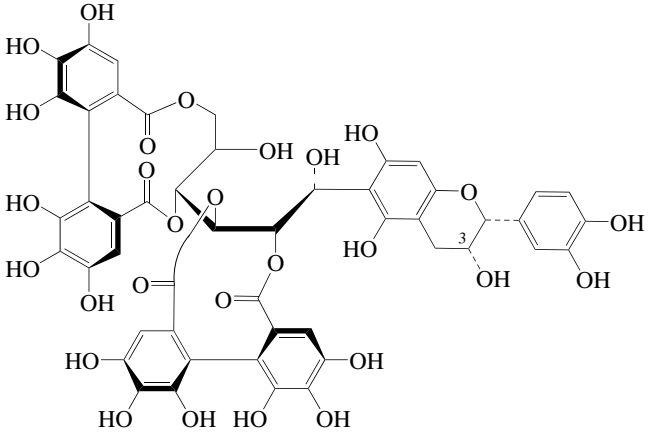
Kopsirachine

The major subject headings for other types of natural product in DNP are as follows:

VA Aliphatic natural products
VC Polyketides
VE Carbohydrates
VF Oxygen heterocycles
VG Simple aromatic natural products
VH Benzofuranoids
VI Benzopyranoids
VM Tannins
VO Lignans
VQ Polycyclic aromatic natural products
VS Terpenoids
VT Steroids
VV Aminoacids and peptides
VX Alkaloids
VY Polypyrroles
VZ Miscellaneous

Tannins

Some higher MW compounds containing flavonoid residues (flavonotannins) form part of the rather ill-defined natural product class of tannins. Examples are **Camelliatannin C** and **Acutissimin A**. The DNP classification scheme formerly contained a separate code for Flavonotannins, but this has been discontinued and these compounds are now classified under the separate flavonoid and tannin codes for the separate moieties. For example Camelliatannin E is classified under VK1100 (flavan-3-ols) and VM6100 (hexahydroxydiphenoyl ester tannins).



Camelliatannin C

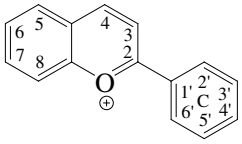
Genomics of flavonoid biosynthesis

A great deal is now known about the enzymes involved in flavonoid biosynthesis and the genomics of their production. A full description lies outside the main scope of this Dictionary, but many literature references are given in appropriate entries. A good review of the field to 2005 is given in Andersen and Markham, 2006 (*loc. cit*.).

DESCRIPTION OF FLAVONOID TYPES

Anthocyanidins (VK0020-VK0095)

Anthocyanidins are intensely coloured plant pigments found throughout vascular plants (they are replaced by betalain (alkaloidal) pigments in one order of higher plants, the Centrospermae or Caryophyllales). The flavylium chromophore in, for example, **Cyanidin** is cationic, being associated *in vivo* with organic acid anions. The sugar-free anthocyanidin aglycones are relatively few and vary according to the number and position of hydroxy and methoxy substituents. Structural complexity is associated with the sugar substituents that are present in the water-soluble anthocyanins. The anthocyanins range from simple structures such as cyanidin 3-glucoside (**Chrysanthemin**) to **Ternatin A1**, a delphinidin derivative which is substituted by seven glucose, four *p*-coumaric acid and one malonic acid moiety. Many anthocyanins have malonic acid (or other aliphatic dicarboxylic acid) residues linked through sugars and are zwitterionic.

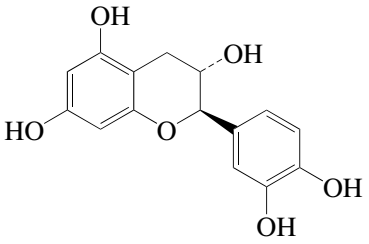


Flavylium (2-phenylbenzopyrylium)

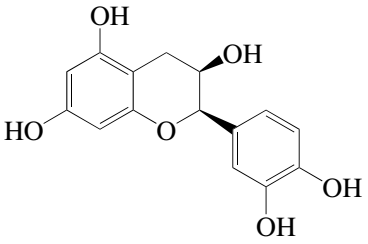
Flavans, Flavanols and Leucoanthocyanidins (VK1000-VK1250)

Flavans are formed by reduction of flavanones with flavan-3-ols as intermediates. This is apparent from the fact that they may co-occur with the related flavanone and that they usually have the same 2*S* configuration. There are a small number of natural flavans, most of which are lipid soluble, and occur notably as leaf surface constituents. **4′,7-Dihydroxy-8-methylflavan**, for example, is a phytoalexin formed in the daffodil following fungal inoculation.

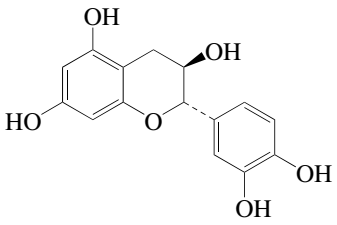
The flavan-3-ols (or catechins) make up by far the largest class of monomeric flavans. Two substances with the 3,3′,4′,5,7-pentahydroxy substitution pattern, namely **Catechin** and **Epicatechin**, are extremely widespread. Most flavan-3-ols, such as Catechin, are of the 2*R*,3*S*-configuration. Those with the 2*R*,3*R*-configuration are prefixed with ′epi′, e.g. Epicatechin. Those with a 2*S*-configuration are distinguished by the enantio (*ent*-) prefix.



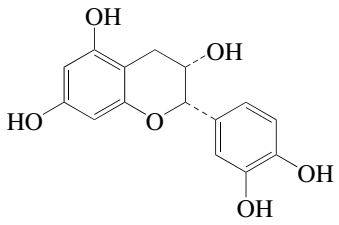
2*R*,3*S*-form
Catechin
(+)-*trans*-form



2*R*,3*R*-form
Epicatechin
(-)-*cis*-form



2*S*,3*R*-form
ent-Catechin
(-)-*trans*-form

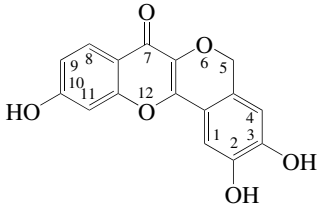


2*S*,3*S*-form
ent-Epicatechin
(+)-*cis*-form

The term leucoanthocyanidin (VK1200) is used to designate all monomeric flavonoids which produce coloured anthocyanidins by cleavage of a C-O bond on heating with mineral acid. In addition to flavans and flavan-3-ols, there occur flavan-3,4-diols and also a fourth but small class of flavans, the flavan-4-ols. Flavan-3,4-diols are of biosynthetic importance, since they are the immediate precursors of the anthocyanins. Most naturally occurring 3,4-diols have been obtained from leguminous heartwoods.

Peltogynoid Flavonoids (VK1300)

This smallish group is related to the flavan-3,4-diols from which they are formed by incorporation of an additional C_1 fragment. The systematic numbering scheme shown is probably preferable since a flavonoid scheme does not cater for numbering the additional carbon (*C*-5).



Peltogynin
2,3,10-Trihydroxy[2]benzopyrano
[4,3-*b*][1]benzopyran-7(5*H*)-one, 9CI

Proanthocyanidin Flavonoids (VK1500)

Proanthocyanidin is the preferred name for condensed tannins (or flavolans), a series of flavan-3-ol oligomers which are usually based on a C-C link from the 8-position of one flavan unit to the 4-position of a second unit. As with the monomeric leucoanthocyanidins, they produce coloured anthocyanidins on heating with mineral acid, but they have the additional property of binding to protein. The best known proanthocyanidins are the **Procyanidins**, based on catechin and/or epicatechin units, and oligomers up to the hexamer have now been found in plants.

The interflavonoid linkage in proanthocyanidins is indicated in the same way as for polysaccharides, the bond and its direction being contained in parentheses (4→). The configuration of the interflavonoid bond at *C*-4 is indicated by the IUPAC α,β nomenclature within the above parentheses. Thus, two common procyanidin dimers are described as **Epicatechin-(4β→8)-catechin** and **Catechin-(4α→8)-catechin**, respectively. A considerable number of doubly linked proanthocyanidins are known, where there is a second linkage through *C*-2 to *O*-7. The naming of such compounds can be accommodated in the same general way, e.g. one such compound is **Epicatechin-(2β→7,4β→6)-epicatechin**. Many oligomeric proanthocyanidins, with molecular sizes greater than the hexamer, have been isolated from plants but their stereochemistries have yet to be determined.

The diagram convention followed in the *Dictionary of Flavonoids* has the heteroatoms at the bottom of the rings, opposite with most of the literature, and, as a consequence, the α,β-configurations at *C*-4 may not match with the literature proanthocyanidin names. For example, see Epicatechin-(4β→6)-epicatechin-(4β→8)-epicatechin-(4β→6)-epicatechin in **Fig. 2**.

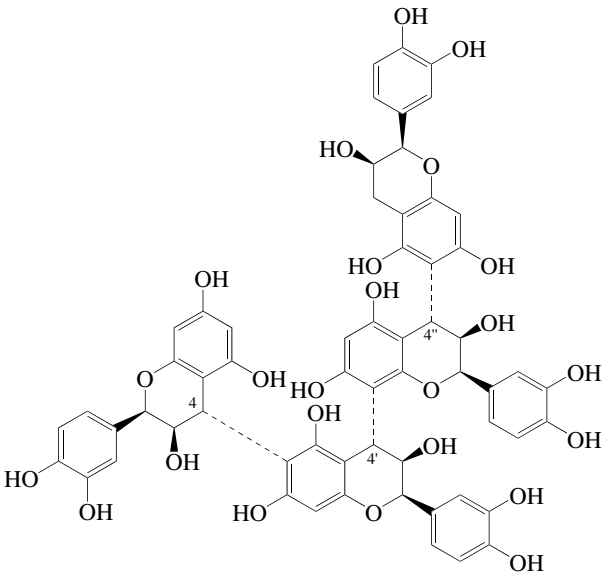


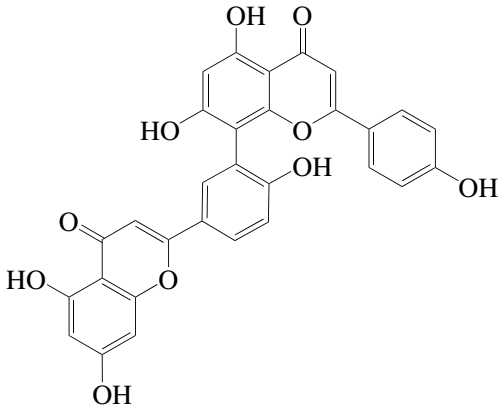
Fig. 2 Dictionary of Flavonoids representation

The variant descriptor for this compound in the entry 3,3′,4′,5,7-Pentahydroxyflavan-(4 →6)-3,3′,4′,5,7-pentahydroxyflavan-(4 →8)-3,3′,4′,5,7-pentahydroxyflavan-(4 →6)-3,3′,4′,5,7-pentahydroxyflavan is given as (2*R*,2′*R*,2″*R*,2‴*R*,3*R*,3′*R*,3″*R*,3‴*R*,4α,4′α,4″α)-*form*, which represents the configuration of the structure drawn with our flavan orientation.

Biflavonoids and Polyflavonoids (VK2000)

The structural variety present in biflavonoids is best illustrated with reference to dimers of Apigenin (4′,5,7-trihydroxyflavone). **Amentoflavone** is the dimer in which two apigenin units are linked by a carbon-carbon bond from the 8-position of one unit to the 3‴ of the other. A range of *O*-methyl ethers of this basic structure occur naturally. Biapigenins with other C-C linkages have been discovered, where the linkage is 3′-3‴, 3-8″, 3-3‴, 6-8″, 8-8″, 6-6″, or 6-3‴. Linkage through a C-O-C bond, may also occur, as in **Hinokiflavone**, where the two apigenin units are linked at the 6 and 4‴ positions.

Mixed biflavonoids are also possible, e.g. flavone-flavanone dimers, as well as compounds based on two or more flavanone units (e.g. **Rhusflavanone**). Biflavonoids have a distinctive distribution pattern. There are major occurrences in gymnosperms, mosses and ferns and a more limited presence in over 15 angiosperm families.



Amentoflavone

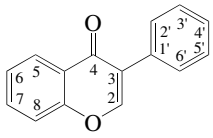
Isoflavonoids (VK3000-VK3100)

Isoflavonoids are based on the 3-phenylchroman skeleton that is biogenetically derived by an aryl migration from a flavanone precursor. They have a very limited distribution in the plant kingdom and are almost entirely restricted to the subfamily Papilionoideae of the Leguminosae. They are found very occasionally in other angiosperm families and there are isolated occurrences in mosses and gymnosperms. Another striking feature about the isoflavonoids is their major presence in lipophilic plant extracts in the free state and the relative rarity of glycosidic derivatives.

Some isoflavonoid isolations reported from microorganisms are almost certainly spurious, and associated with contamination from the culture medium.

The largest class of isoflavonoids are the isoflavones (VK3000-VK3070). There are simple structures such as **Genistein** (4′,5,7-trihydroxyisoflavone) but also a wealth of prenylated derivatives. The prenyl sidechains may ring-close on adjacent hydroxyl groups, giving rise to tetracyclic and pentacyclic compounds.

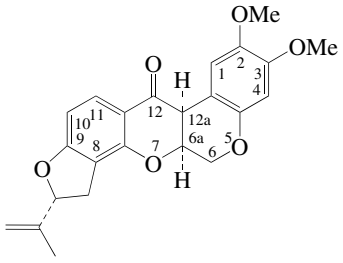
The related isoflavanones (VK3100), in which the 2,3-bond is reduced, are much rarer than the isoflavones.



Isoflavone
3-Phenyl-4*H*-1-benzopyran-4-one

Rotenoid flavonoids (VK3200-VK3300)

Rotenoids are a class of isoflavonoid characterised, like the peltogynoids, by the presence of an extra carbon atom in an additional heterocyclic ring. This system is derived by oxidative cyclisation of a 2′-methoxyisoflavone. Rotenoids characteristically possess insecticidal and piscicidal activity, as shown by **Rotenone**, one of the parent structures. Besides rotenoids proper, there are a small number of 12*a*-hydroxyrotenoid (VK3250) and dehydrorotenoid (VK3300) flavonoids, in which there is a double bond introduced at the 6*a*-12*a* position.



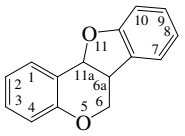
Rotenone
1,2,12,12*a*-Tetrahydro-8,9-dimethoxy-2-(1-methylethenyl)[1]
benzopyrano[3,4-*b*]furo[2,3-*h*][1]benzopyran-6(6*aH*)-one, 9Cl

The numbering system most used by natural products scientists for Rotenone is shown above but other schemes have been used and it must be noted that the CA scheme differs. Various numbering schemes have also been used for the cyclised prenyl side-chain in Rotenone and similar compounds.

Pterocarpans (VK3400-VK3550)

Pterocarpans contain a tetracyclic ring system derived from the basic isoflavone skeleton by an ether linkage between the 4- and 2′-positions. The systematic numbering is distinctive for this particular carbon skeleton. The majority of natural pterocarpans have been obtained from phytoalexin studies, so that, in general, they possess antifungal activity. They are conveniently subdivided into simple pterocarpan flavonoids, 6*a*-hydroxypterocarpan flavonoids and pterocarpene flavonoids, in which unsaturation is introduced at the 6*a*-11*a* position. The best known structure is **Pisatin**, a 6*a*-hydroxypterocarpan which is the phytoalexin of the pea plant. Many

isoprenylated pterocarpans have been described and these substances constitute the second largest group of isoflavonoids after the isoflavones. The commonly used numbering system corresponds with the CA scheme.

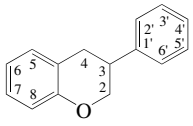


Pterocarpan
6*a*,11*a*-Dihydro-6*H*-benzofuro[3,2-*c*][1]benzopyran, 9Cl

Although pterocarpans have two chiral centres, only cis- compounds (*R*,*R* and *S*,*S* configurations) are found. Most pterocarpan phytoalexins that have been isolated are laevorotatory and have the (6*aR*,11*aR*) absolute configuration; a few are dextrorotatory and can, with reasonable certainty, be assigned to the (6*aS*,11*aS*) series.

Isoflavans (VK3600-VK3700)

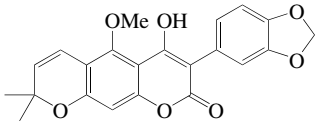
Isoflavans are another class of isoflavonoid which have been mainly isolated as phytoalexins after fungal inoculation of plant tissues. They are also metabolites of dietary isoflavones. **Equol** (4′,7-dihydroxyisoflavan) which has been isolated from the urine of mammals, has estrogenic activity. The numbering system of isoflavans is the same as that of the isoflavones. Isoflavanquinones (VK3650), isoflav-2-enes (VK3680) and isoflav-3-enes (VK3700) have also been isolated but are uncommon.



Isoflavan
3,4-Dihydro-3-phenyl-2*H*-1-benzopyran

3-Arylcoumarin Flavonoids (VK3720)

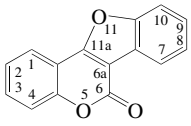
These are a medium-sized group of natural products which are oxidatively related to the isoflavonoids, e.g. **Robustin** which is a prenyl-cyclised 3-arylcoumarin.



Robustin

Coumestan Flavonoids (VK3750)

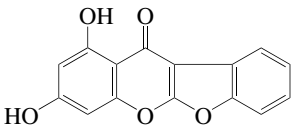
One final group of isoflavonoids, numerically important in terms of numbers of structures, are the coumestans. Like the isoflavans and many isoflavones, they exhibit weak estrogenic activity in mammals. The simplest structure is **Coumestrol** (3,9-dihydroxycoumestan) but a variety of prenylated derivatives have also been characterised. The numbering system used is the same as in the pterocarpan series and coincides with the CA systematic numbering.



Coumestan
6*H*-Benzofuro[3,2-*c*][1]benzopyran-6-one, 9Cl

Coumaronochromene Flavonoids (VK3770)

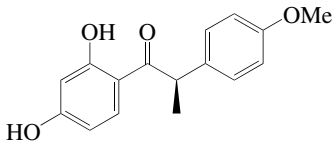
These are related to isoflavonoids by benzofuranoid cyclisation.



Ayamenin B

α-Methyldeoxybenzoin Flavonoids (VK3800)

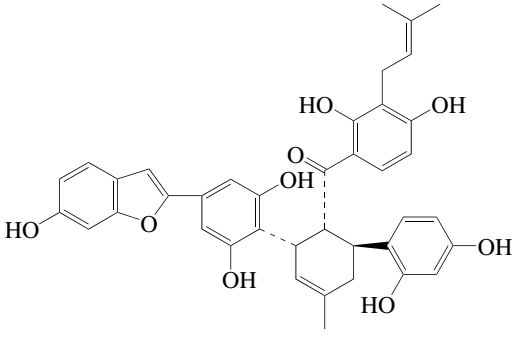
These constitute a small group found, so far, exclusively in the Leguminosae (Fabaceae) which lack the ring oxygen. They co-occur with isoflavonoids and are clearly related to them biosynthetically, although the detailed biosynthesis does not appear to have been studied.



Angolensin

2-Arylbenzofuran Flavonoids (VK3820)

2-Arylbenzofuran flavonoids are fairly widespread as natural products (more than 300 identified) mostly in higher plants, but a few in fungi. All are considered as a subgroup of the flavonoids within the context of this Dictionary. The biosynthesis of the arylbenzofuran nucleus has not been studied for all types; in **Chalcomoracin** it is certainly derived from a chalcone by a cyclisation and ring contraction with the loss of CO_2. The rest of the molecule is a Diels-Alder product from a cinnamoylpolyketide pathway.

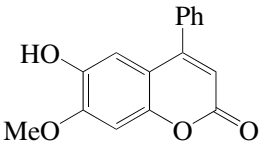


Chalcomoracin

Neoflavonoids (VK4000)

This term refers to a small group of C_{15} naturally occurring substances structurally and biogenetically related to the flavonoids and isoflavonoids. They have a limited distribution, occurring with isoflavonoids in the subfamily Papilionoideae of the Leguminosae. Other families where they have been encountered are the Guttiferae, Rubiaceae, Passifloraceae and Compositae.

There are three main subdivisions of structures: the 4-arylcoumarins, the dalbergiones and the dalbergiquinols. Representative structures, all isolated from *Dalbergia* species, are the ring-closed **Dalbergin** and the two related ring-opened compounds, **4-Methoxydalbergione** and **Obtusaquinol**. Prenylated derivatives of the 4-arylcoumarins have been characterised in the Guttiferae.



Dalbergin

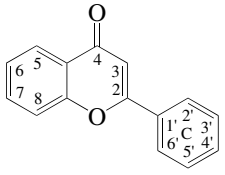
Flavones and Flavonols (VK5000-VK5280)

Flavones are a class of polyhydroxyflavonoids based on the structure of **Flavone** (2-phenyl-4*H*-1-benzopyran-4-one or 2-phenylchromone) which itself occurs naturally as a farina on *Primula* plants. Flavonols are flavones with a 3-hydroxy substituent and they share the same nomenclature. It is convenient to separate these two classes, mainly because so many structures are known: some 1000 aglycones and over 2,000 glycosides. They differ in their spectroscopic and chromatographic properties and can readily be distinguished by these means.

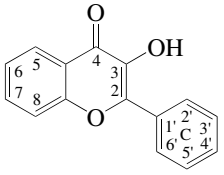
They are biosynthetically distinct, flavones being formed by oxidation of flavanones, flavonols by oxidation of dihydroflavonols. There are also differences in the way they occur naturally; *C*-glycosides are common in the flavone series but rare among flavonols.

In the DNP Type of Compound index they are subdivided according to the number of O substituents (including methylenedioxy groups): *C*-methylation and *C*-prenylation are relatively common.

Free lipophilic flavones and flavonols occur at the upper surface of leaves in the wax or in bud exudates. There are also many *O*-glycosides, which are found within the leaf in the cell vacuole and in other parts of the plant. There are at least 400 different glycosides of **Quercetin** and 500 of the related flavonol, **Kaempferol**. (The principal derivatives of such widespread parent flavonoids have their own entries in DNP and it is important to use the indexes to locate a particular glycoside which may be documented in one of these subsidiary entries).



Flavone
2-Phenyl-4*H*-1-benzopyran-4-one

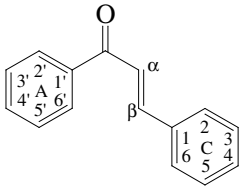


Flavonol
3-Hydroxy-2-phenyl-4*H*-1-benzopyran-4-one

In this dictionary, individual flavonols are named both as derivatives of an *n*-hydroxyflavonol, and as derivatives of an (*n* + 1) hydroxyflavone, allowing their rapid location through the indexes whichever name is employed.

Chalcone and Dihydrochalcone Flavonoids (VK6010-VK6095, VK6200)

Chalcones are open-chain C_6-C_3-C_6 compounds, the first intermediates of flavonoid biosynthesis. They occur sporadically in plants as yellow pigments, well over 1000 structures being known if various types of complex chalcones are included. The usual numbering system of chalcone substituents differs from that in ring-closed flavonoids.



Chalcone
1,3-Diphenyl-2-propen-1-one, 9Cl

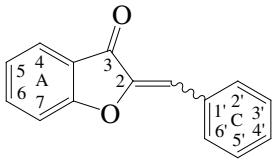
Note that the numbering of the A ring is the same in both systems of nomenclature, but the C ring is unprimed in the semitrivial chalcone system and carries a double prime if systematic numbering is used (the α- and β-positions becoming 2 and 3, respectively). The majority of chalcones have hydroxy/methoxy substituents at the 2′,4,4′,6′-positions, and a significant number of prenylated derivatives are known.

In dihydrochalcones, the double bond in the α,β-position is reduced and the compounds are colourless. The numbering system is the same as in the chalcone series. They occur variously in higher plants, ferns and liverworts.

The α- and β-oxygenated chalcones are coded separately (VK6095).

Aurone Flavonoids (VK6100)

Aurones are a small group of yellow pigments, based on the 2-benzylidenecoumaranone nucleus. These are formed by oxidation of chalcones and may co-occur with the related chalcone precursors. The numbering system differs from that in the chalcone series, so that the most common hydroxylation pattern, that of the pigment **Aureusidin**, is 3′,4,4′,6-tetrahydroxyaurone. Note the potential occurrence of geometrical isomers.

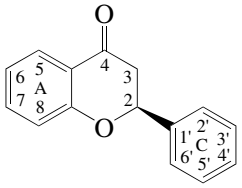


Aurone
2-(Phenylmethylene)-3(2*H*)-benzofuranone, 9Cl

The auronols (2-hydroxy-2-benzylcoumaranones) are a closely related series of colourless compounds, with only a few members so far described. They are chiral molecules but with little current information on absolute configurations.

Flavanones (VK6300-VK6380)

Flavanones are 2,3-dihydro-2-phenyl-4*H*-1-benzopyran-4-ones. The simplest known natural flavanone is the 7-hydroxy derivative, while the commonest is 4′,5,7-trihydroxyflavanone (**Naringenin**). Flavanones are isomeric with chalcones and arise biosynthetically from them by a reaction catalysed by an isomerase. They have a centre of chirality at *C*-2 and usually occur in optically active form with the 2*S*-configuration. They commonly occur as glycosides. A variety of more complex derivatives with methyl and/or prenyl substituents has been described. Flavanones have a wide occurrence in plants.

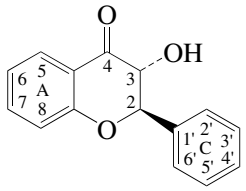


Flavanone
2,3-Dihydro-2-phenyl-4*H*-1-benzopyran-4-one, 9Cl
S-form shown

Dihydroflavonols (VK6410-VK6470)

Dihydroflavonols can be described as 3-hydroxyflavanones or as flavanon-3-ols. They are formed biosynthetically by oxidation at *C*-3 of flavanones, without inversion at *C*-2, and are the immediate precursors by a further oxidation of the flavonols. Dihydroflavonols have two chiral centres at *C*-2 and *C*-3; most naturally occurring compounds possess the (2*R*,3*R*) stereochemistry.

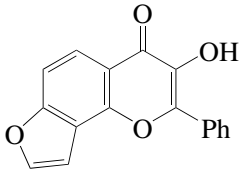
Dihydroflavonols such as **Dihydroquercetin** have a wide occurrence in nature being present in the free state in woody plant tissues. They also occur in glycosidic combination in other plant parts.



Dihydroflavonol
2,3-Dihydro-3-hydroxy-2-phenyl-4*H*-1-benzopyran-4-one, 9Cl
2*R*,3*R*-form shown

Furanoflavonoids (VK6500)

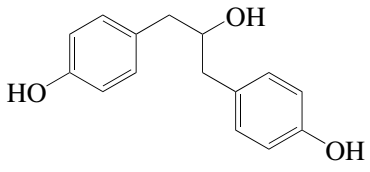
These are relatively common and are exemplified by **Karanjonol**. Other furan rings arise by prenyl cyclisation, e.g. **Maximoisoflavanone A**.



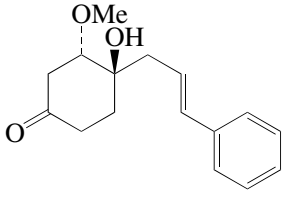
Karanjonol

1,3-Diarylpropanes Flavonoids (VK6600) and Cinnamylphenol Flavonoids (VK6700)

These categories cover a variety of miscellaneous plant phenylpropanoids more or less related to the flavonoids.



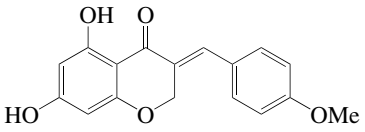
Propterol



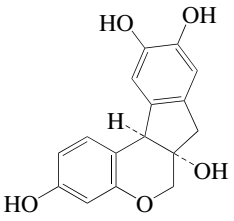
Candenatenin D

Homoisoflavonoids (VK6800)

The homoisoflavonoids, from angiosperms, comprise benzyl- and benzylidene compounds such as **Eucomin**, and some long-known cyclised compounds **Brazilin** and **Haematoxylin**. The biosynthesis of Eucomin has been shown to proceed by the incorporation of a methionine-derived extra carbon atom.



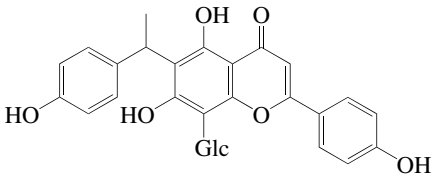
Eucomin



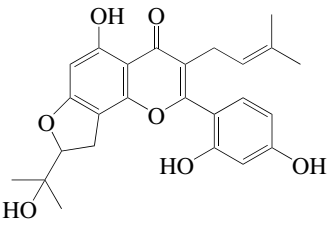
Brazilin

Flavonoid *C*-Glycosides (VK7000) and Cyclised *C*-Polyprenylated Flavonoids (VK8300)

Compounds of this type are collected here and given these additional codes.



Cucumerin A



Albanin C

THE DICTIONARY OF FLAVONOIDS ON CD-ROM

The *Dictionary of Flavonoids* is published together with a fully searchable CD-ROM. Space considerations have precluded the inclusion of indexes other than the Name and Type of Compound indexes in the printed version. By contrast, the CD-ROM contains searchable indexes on the following 41 fields:

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

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

When accessing the *Dictionary of Flavonoids on CD-ROM* the first screen that is obtained is the Search Form window, (**Fig. 3**).

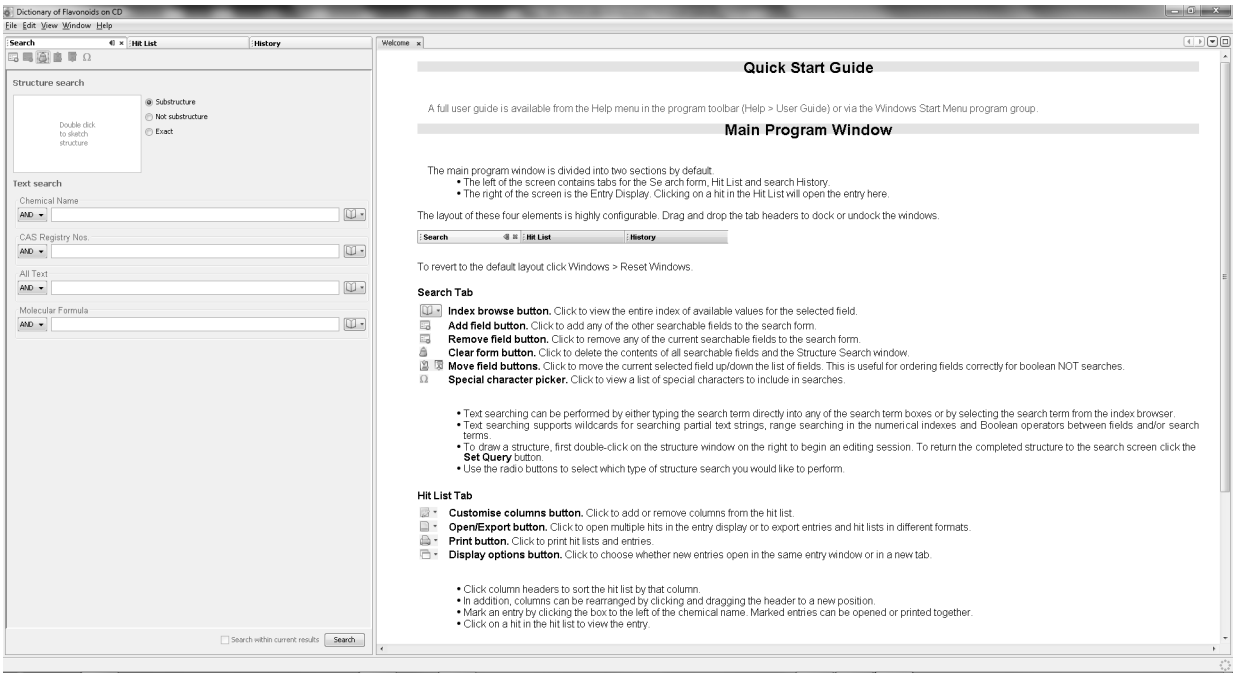


Fig. 3 Search Form Window

The Search Form window consists of two parts:

1. Structure Search – allowing structure and substructure searching
2. Text search – search from one or more of the 41 available data/text fields

From the Search Form window, design your search profile using text, structure or text/structure searching. Once your search has been performed the resultant hits are listed alphabetically by chemical name in the Hit List screen. Clicking on any one of the hits in the Hit List screen will result in that entry being displayed in the Entry Display screen (**Fig. 4**).

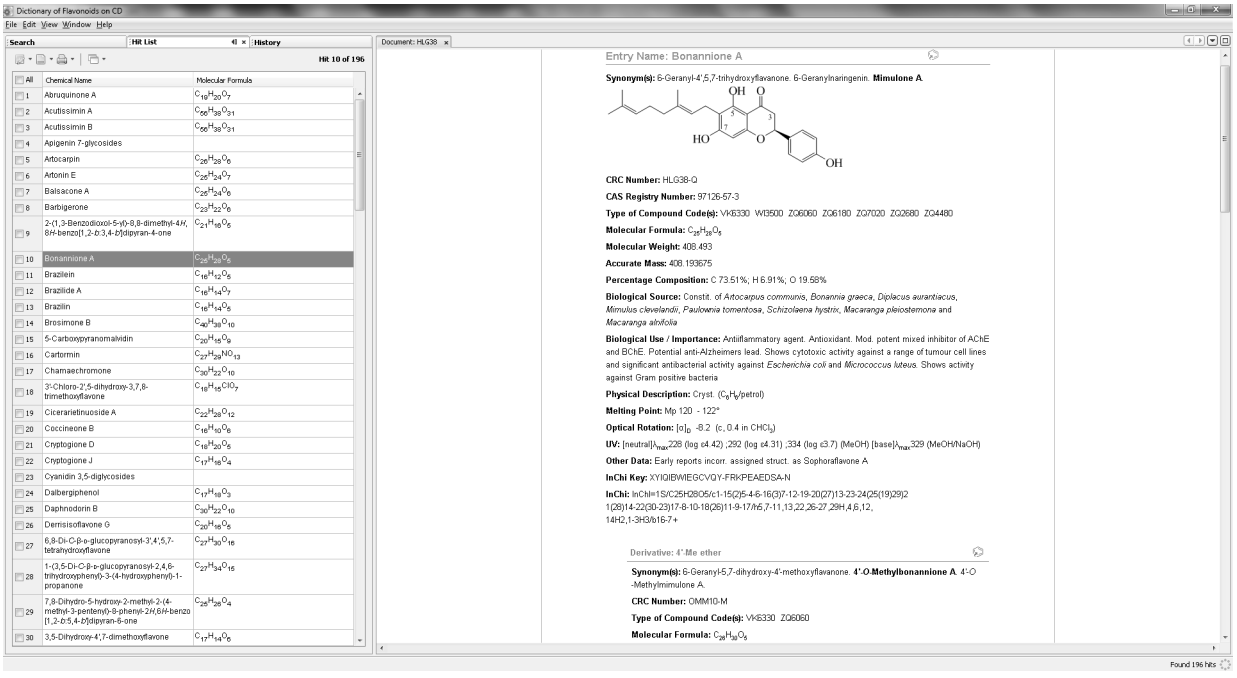


Fig. 4 Hit List and Entry Display Screen

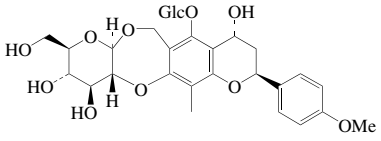
Any comments and suggestions for inclusion may be sent to:

The Editors, Dictionary of Flavonoids
CRC Press/Taylor & Francis Group
5th Floor, Bentima House
168–172 Old Street
London EC1V 9BP

Email: steve.walford@informa.com

Abacopterin D A-1

[877854-78-9]



Absolute Configuration

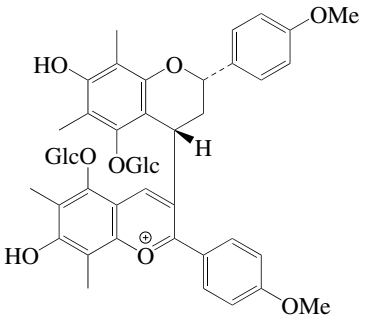
$C_{30}H_{38}O_{15}$ 638.621

Constit. of the rhizomes of *Abacopteris penangiana* (preferred genus name *Pronephrium*). Needles. Mp 278-280°. $[\alpha]_D^{25}$ + 18 (c, 0.2 in MeOH). λ_{max} 227 (log ϵ 4.32); 275 (log ϵ 3.42); 281 (log ϵ 3.4) (MeOH).

Zhao, Z. *et al., J. Nat. Prod.*, 2006, **69**, 265-268 (*Abacopterin D*)

Abacopterin J A-2

[1309827-34-6]



Absolute Configuration

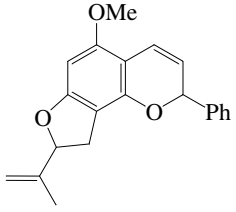
$C_{48}H_{55}O_{18}^{\oplus}$ 919.952

Constit. of the rhizomes of *Abacopteris penangiana*. Amorph. red powder. $[\alpha]_D^{20}$-207 (c, 0.06 in MeOH). Counterion not specified. λ_{max} 214 (log ϵ 4.47); 225 (log ϵ 4.45); 292 (log ϵ 4.24); 368 (log ϵ 3.77); 500 (log ϵ 4.04) (MeOH).

Zhao, Z. *et al., Fitoterapia*, 2010, **81**, 1171-1175 (*Abacopterin J*)

Abbottin A-3

*8,9-Dihydro-5-methoxy-8-(1-methylethenyl)-2-phenyl-2*H*-furo[2,3-*h*]-1-benzopyran,* 9CI. ***Hildgardtene*** [106327-62-2] [104777-96-0]



$C_{21}H_{20}O_3$ 320.387

Constit. of *Tephrosia abbottiae*, *Tephrosia crassifolia*, *Tephrosia emeroides* and *Tephrosia hildebrandtii*. Red viscous oil. Hildgardtene assigned incorrect name in CA. λ_{max} 246; 294; 320 (sh) (EtOH).

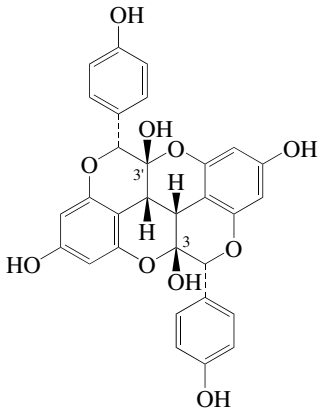
Gómez-Garibay, F. *et al., Chem. Ind. (London)*, 1986, 827 (*Tephrosia abbottiae constit*)

Delle Monache, F. *et al., Phytochemistry*, 1986, **25**, 1711-1713 (*Tephrosia hildebrandtii constit*)

Machocho, A.K. *et al., Int. J. Pharmacogn.*, 1995, **33**, 222-227 (*Tephrosia emeroides constit*)

Abiesanol A A-4

[1024637-39-5]



Relative Configuration

$C_{30}H_{22}O_{10}$ 542.498

Constit. of the aerial parts of *Abies georgei*. Exhibits potent inhibitory activity against LPS-induced NO prodn. Pale yellow cryst. $[\alpha]_D^{20}$-210 (c, 0.48 in MeOH). λ_{max} 229 (log ϵ 4.37); 273 (log ϵ 3.23); 312 (log ϵ 2.43) (MeOH).

3,3′-Diepimer: [1373116-16-5] ***Abiesanol B***

$C_{30}H_{22}O_{10}$ 542.498

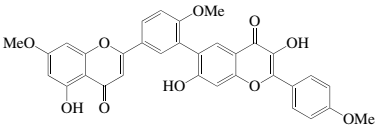
Constit. of the aerial parts of *Abies georgei*. Amorph. powder. $[\alpha]_D^{23}$ +8.8 (c, 0.1 in MeOH). λ_{max} 219 (log ϵ 4.86); 273 (log ϵ 4.03) (MeOH).

Yang, X.-W. *et al., Tet. Lett.*, 2008, **49**, 3042-3044 (*Abiesanol A, cryst struct, activity*)

Yang, X.-W. *et al., Planta Med.*, 2011, **77**, 742-748 (*Abiesanol B*)

Abiesin A-5

3,5″,7-Trihydroxy-4′,4‴,7″-trimethoxy-6,3‴-biflavone [90850-93-4]



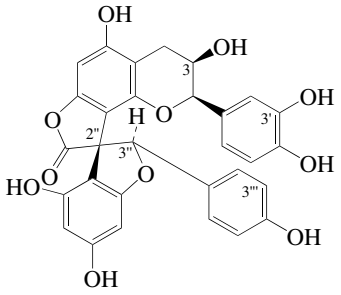
$C_{33}H_{24}O_{10}$ 580.547

Constit. of the leaves of *Abies webbiana*. Yellow cryst. (EtOH). Mp 281-282°. $[\alpha]_D^{24}$-3.6 (Py). λ_{max} 226 (ϵ 38900); 286 (ϵ 41700); 391 (ϵ 15800) (EtOH/NaOMe) (Derep). λ_{max} 272 (ϵ 33100); 332 (ϵ 28800) (EtOH) (Derep).

Chatterjee, A. *et al., Phytochemistry*, 1984, **23**, 704-705 (*Abiesin*)

Abiesinol A A-6

13-Hydroxylarixinol [1190070-88-2]



Absolute Configuration

$C_{30}H_{22}O_{11}$ 558.497

Spirobiflavonoids. The Abiesinols and the other compds. covered by thisentry have not been directly compared. Constit. of *Abies georgei* and *Abies sachalinensis*. Inhibition of NO-dependent cell transformation in human liver chang cells. Brown powder. $[\alpha]_D^{20}$-110.2 (c, 1 in MeOH). λ_{max} 236 (log ϵ 4.16); 277 (log ϵ 3.88) (EtOH). λ_{max} 219 (log ϵ 4.86); 273 (log ϵ 4.03) (MeOH).

3‴-Hydroxy: [280576-18-3] ***Vitisinol***†. *Abiesinol G*

$C_{30}H_{22}O_{12}$ 574.497

Constit. of *Vitis amurensis*, *Larix olgensis* var. *koreana* and *Abies sachalinensis*. Brown powder. $[\alpha]_D^{24}$-106.1 (c, 0.52 in MeOH) (Abiesinol G). $[\alpha]_D^{22}$-90 (c, 0.1 in MeOH) (Vitisinol). λ_{max} 238 (log ϵ 3.72); 279 (log ϵ 3.49) (EtOH) (Abiesinol G). λ_{max} 210 (log ϵ 4.63); 280 (log ϵ 4.12) (MeOH) (Vitisinol).

3′-Deoxy: [101046-79-1] ***Larixinol***. *Abiesinol E*

$C_{30}H_{22}O_{10}$ 542.498

Constit. of *Abies chensiensis*, *Abies sachalinensis* and *Larix gmelinii*. Inhibition of NO-dependent cell transformation in human liver chang cells. Cryst. or brown powder. Mp 208-210° (Larixinol). $[\alpha]_D^{20}$-112 (c, 0.6 in MeOH) (Abiesinol E). $[\alpha]_D^{20}$-151 (c, 1 in Me_2CO) (Larixinol). λ_{max} 239 (log ϵ 3.73); 272 (log ϵ 3.54) (EtOH).

3′-Deoxy, 3‴-hydroxy: [937247-25-1] ***Olgensisinol A***. *Abiesinol C*

$C_{30}H_{22}O_{11}$ 558.497

Constit. of the bark of *Larix olgensis* var. *koreana* and *Abies sachalinensis*. Brown or yellow powder. Mp 180° dec. (Olgensisinol A). $[\alpha]_D^{19}$-142 (c, 0.74 in MeOH) (Abiesinol C). $[\alpha]_D^{20}$-113.3 (c, 0.6 in MeOH) (Olgensisinol A). λ_{max} 238 (log ϵ 3.71); 273 (log ϵ 3.65) (EtOH).

2″-Epimer: [1190070-89-3] ***Abiesinol B***

$C_{30}H_{22}O_{11}$ 558.497

Constit. of the bark of *Abies sachalinensis*. Brown powder. $[\alpha]_D^{17}$-25.6 (c, 0.32 in MeOH). λ_{max} 238 (log ϵ 4.01); 276 (log ϵ 3.67) (EtOH).

2″-Epimer, 3‴-hydroxy: [1190070-92-8] ***Abiesinol H***

$C_{30}H_{22}O_{12}$ 574.497

Constit. of the bark of *Abies sachalinensis*. Brown powder. $[\alpha]_D^{24}$-17.7

(c, 0.33 in MeOH). λ_{max} 237 (log ϵ 3.94); 279 (log ϵ 3.62) (EtOH).

2″-Epimer, 3′-deoxy: [1190070-91-7] ***Abiesinol F***
$C_{30}H_{22}O_{10}$ 542.498
Constit. of the bark of *Abies sachalinensis*. Brown powder. $[\alpha]_D^{19}$-17.3 (c, 0.46 in MeOH). λ_{max} 234 (log ϵ 4.19); 272 (log ϵ 3.67) (EtOH).

2″-Epimer, 3′-deoxy, 3‴-hydroxy: [1190070-90-6] ***Abiesinol D***
$C_{30}H_{22}O_{11}$ 558.497
Constit. of the bark of *Abies sachalinensis*. Brown powder. $[\alpha]_D^{19}$-15.9 (c, 0.51 in MeOH). λ_{max} 238 (log ϵ 3.87); 276 (log ϵ 3.7) (EtOH).

3-Epimer, 3‴-hydroxy: [950171-51-4] ***Larisinol***
$C_{30}H_{22}O_{12}$ 574.497
Constit. of the bark of *Larix gmelinii*. Tentative stereochem. assigned.

3-Epimer, 3′-deoxy: [1207671-27-9] ***3-Epilarixinol***
$C_{30}H_{22}O_{10}$ 542.498
Constit. of *Abies chensiensis*. Pale yellow powder. $[\alpha]_D^{20}$-116.4 (c, 0.5 in MeOH).

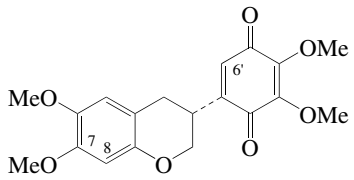
3″-Epimer, 3‴-hydroxy: ***Olgensisinol B***
$C_{30}H_{22}O_{12}$ 574.497
Constit. of the stem bark of *Larix olgensis* var. *koreana*. Yellow powder. Mp 170° dec. $[\alpha]_D$-26.1 (c, 3 in MeOH).

3,3″-Diepimer, 3′-deoxy: [1207671-28-0] ***2′,3-Diepilarixinol***
$C_{30}H_{22}O_{10}$ 542.498
Constit. of *Abies chensiensis*. Pale yellow powder. $[\alpha]_D^{20}$+25 (c, 0.2 in MeOH).

Shen, Z. *et al., Chem. Comm.*, 1985, 1135-1137 (*Larixinol*)
Wang, J.-N. *et al., Phytochemistry*, 2000, **53**, 1097-1102 (*Vitisinol*)
Yang, B.-H. *et al., Helv. Chim. Acta*, 2005, **88**, 2892-2896 (*Olgensisinols A,B*)
Fedorova, T.E. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2007, **43**, 208-209 (*Larisinol*)
Wada, S. *et al., Helv. Chim. Acta*, 2009, **92**, 1610-1620 (*Abiesinols A-H*)
Li, Y.-L. *et al., Planta Med.*, 2009, **75**, 1534-1537 (*cryst struct, 3-Epilarixinol, 2′,3-Diepilarixinol*)
Wada, S.-I. *et al., Chem. Biodiversity*, 2010, **7**, 2303-2308 (*Abiesinols A,E, activity*)
Yang, X.-W. *et al., Planta Med.*, 2011, **77**, 742-748 (*Abies georgei constit*)

Abruquinone A A-7

*5-(3,4-Dihydro-6,7-dimethoxy-2*H*-1-benzopyran-3-yl)-2,3-dimethoxy-2,5-cyclohexadiene-1,4-dione, 9CI. 3′,4′,6,7-Tetramethoxy-2′,5′-isoflavanquinone*



(*R*)-*form*

$C_{19}H_{20}O_7$ 360.363

The ref. describing the *R*-enantiomers misapplies some Abruquinone names assigned by earlier workers, and the errors are carried over into CAS. The names given here for the earlier isolated *S*-enantiomers are correct.

(R)-form [219802-26-3]
Constit. of the roots of *Abrus precatorius*. Orange cryst. Mp 110-111°. $[\alpha]_D$-112.2 (c, 1.1 in $CHCl_3$). λ_{max} 270 (log ϵ 4.15); 290 (sh); 395 (log ϵ 3.23) (no solvent reported).

*7-*O*-De-Me:* [219802-30-9]
$C_{18}H_{18}O_7$ 346.336
Constit. of the roots of *Abrus precatorius*. Amorph. solid. $[\alpha]_D$-77.8 (c, 1.5 in MeOH). Called *R*-Abruquinone D in the 1998 ref. λ_{max} 294 (log ϵ 4.16); 400 (log ϵ 3.23) (no solvent reported).

8-Methoxy: [219802-28-5] ***(R)-Abruquinone B***
$C_{20}H_{22}O_8$ 390.389
Constit. of the roots of *Abrus precatorius*. Amorph. solid. $[\alpha]_D$-101.3 (c, 1.9 in $CHCl_3$). λ_{max} 268 (log ϵ 4.03); 290 (sh); 395 (log ϵ 3.01) (no solvent reported).

*8-Methoxy, 7-*O*-de-Me:* [219802-33-2]
$C_{19}H_{20}O_8$ 376.362
Constit. of the roots of *Abrus precatorius*. Amorph. solid. $[\alpha]_D$-67.6 (c, 2.5 in MeOH). Called *R*-Abruquinone E in the 1998 ref. λ_{max} 270 (log ϵ 4.16); 290 (sh); 390 (log ϵ 3.23) (no solvent reported).

3′,6-Bis(demethoxy), 6′-methoxy, 8-hydroxy: [1473395-72-0] ***Abruquinone I***
$C_{18}H_{18}O_7$ 346.336
Constit. of *Abrus precatorius* ssp. *africanus*. Amorph. yellow solid. $[\alpha]_D^{19}$+21 (c, 0.1 in MeOH). λ_{max} 205 (log ϵ 4.58); 286 (log ϵ 4.07) (MeOH).

(S)-form [71593-10-7]
Constit. of the roots of *Abrus precatorius*. Possesses antiallergic, antiinflammatory and antiplatelet activities. Orange needles (C_6H_6/hexane). Sol. MeOH; poorly sol. H_2O. Mp 109-110°. λ_{max} 269 (log ϵ 4.03); 398 (log ϵ 2.94) (EtOH).

8-Hydroxy: [168433-91-8] ***Abruquinone F***
$C_{19}H_{20}O_8$ 376.362
Constit. of *Abrus precatorius*. Brown platelets (MeOH). Mp 141-143°. λ_{max} 268 (log ϵ 4.14); 396 (log ϵ 3.05) (EtOH).

8-Methoxy: [71593-09-4] ***Abruquinone B***
$C_{20}H_{22}O_8$ 390.389
Constit. of *Abrus precatorius*. Orange plates (MeOH). Sol. MeOH; poorly sol. H_2O. Mp 61-63°. $[\alpha]_D^{25}$+128.6 (c, 0.25 in EtOH). λ_{max} 268 (log ϵ 4.09); 397 (log ϵ 3.04) (EtOH).

*8-Methoxy, 6-*O*-de-Me:* [71593-11-8] ***Abruquinone C***
$C_{19}H_{20}O_8$ 376.362
Constit. of *Abrus precatorius*. Dark plates (MeOH). Mp 144-146°.

*8-Methoxy, 7-*O*-de-Me:* [168433-89-4] ***Abruquinone D***
$C_{19}H_{20}O_8$ 376.362
Constit. of *Abrus precatorius*. Red-brown viscous liq. λ_{max} 268 (log ϵ 4.01); 392 (log ϵ 2.9) (EtOH).

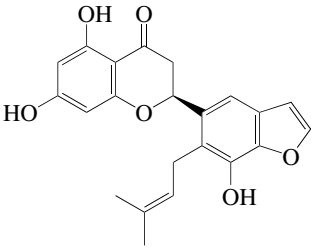
6′,8-Dimethoxy: [168433-90-7] ***Abruquinone E***
$C_{21}H_{24}O_9$ 420.415
Constit. of *Abrus precatorius*. Red-brown viscous liq. λ_{max} 291 (log ϵ 4.21); 399 (log ϵ 3.74) (EtOH).

3′,6-Bis(demethoxy), 6′,8-dihydroxy: [219823-44-6] ***Abruquinone G†***
$C_{17}H_{16}O_7$ 332.309
Constit. of the roots of *Abrus precatorius*. Red cryst. (MeOH). Mp 228-230°. $[\alpha]_D$+46.7 (c, 0.34 in MeOH). Incorrect struct. assigned by CAS. λ_{max} 292 (log ϵ 4.03); 425 (log ϵ 2.51) (no solvent reported).

3′,6-Bis(demethoxy), 6′,8-dimethoxy: [21140-89-6]
$C_{19}H_{20}O_7$ 360.363
Constit. of *Abrus precatorius* ssp. *africanus*. $[\alpha]_D^{19}$-19 (c, 0.1 in MeOH). $[\alpha]_D^{20}$-1.3 (c, 0.1 in $CHCl_3$).

Lupi, A. *et al., Gazz. Chim. Ital.*, 1979, **109**, 9-12 (*Abruquinones A,B,C, ord, struct*)
Lupi, A. *et al., Gazz. Chim. Ital.*, 1980, **110**, 625-628 (*Abruquinones A,B, synth*)
Wang, J.-P. *et al., Eur. J. Pharmacol.*, 1995, **273**, 73-82 (*S-form, activity*)
Kuo, S.-C. *et al., Planta Med.*, 1995, **61**, 307-312 (*Abruquinones A-F, activity*)
Hsu, M.F. *et al., Br. J. Pharmacol.*, 1997, **120**, 917-925 (*S-form, activity*)
Song, C.-Q., *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1998, **40**, 734-739 (*Abruquinones A-G, cd, struct*)
Hata, Y. *et al., Planta Med.*, 2013, **79**, 492-498 (*Abruquinones B,G,I, cd, abs config*)

Abyssinoflavanone IV A-8

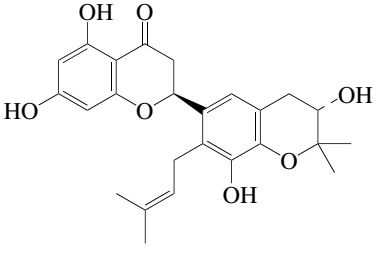


$C_{22}H_{20}O_6$ 380.396
Constit. of *Erythrina abyssinica*. Amorph. solid. $[\alpha]_D$-53 (c, 0.4 in MeOH).

Moriyasu, M. *et al., J. Nat. Prod.*, 1998, **61**, 185-188 (*isol, cd, pmr, cmr*)

Abyssinoflavanone V† A-9

[201535-06-0]



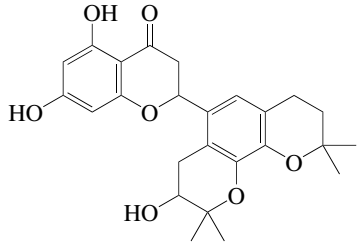
$C_{25}H_{28}O_7$ 440.492

Constit. of *Erythrina abyssinica*.
Amorph. pale yellow solid. $[\alpha]_D$-56 (c, 0.7 in MeOH).

Moriyasu, M. *et al., J. Nat. Prod.*, 1998, **61**, 185-188 (*isol, cd, pmr, cmr, ms*)
Yang, J.H. *et al., Chin. Chem. Lett.*, 2008, **19**, 658-660 (*synth*)

Abyssinoflavanone VI† A-10

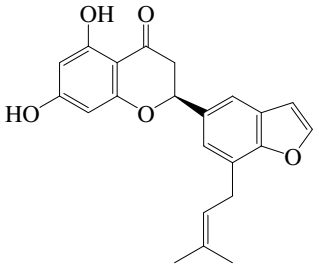
[201535-07-1]



$C_{25}H_{28}O_7$ 440.492
Constit. of *Erythrina abyssinica*. Pale yellow solid. Possible artifact. Racemic.

Moriyasu, M. *et al., J. Nat. Prod.*, 1998, **61**, 185-188 (*isol, pmr, cmr, ms*)

Abyssinoflavanone VI† A-11

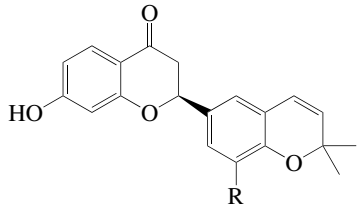


$C_{22}H_{20}O_5$ 364.397
Not to be confused with Abyssinoflavanone VI, A-10.

(*S*)-*form* [943515-82-0]
Constit. of the stem bark of *Erythrina abyssinica*. Amorph. powder. $[\alpha]_D^{25}$-32.5 (c, 0.1 in MeOH). λ_{max} 213 (log ϵ 4.8); 296 (log ϵ 4.22); 328 (log ϵ 3.47) (MeOH).
Cui, L. *et al., J. Nat. Prod.*, 2007, **70**, 1039-1042 (*struct, cd, abs config*)

Abyssinone I A-12

*7-Hydroxy-2′,2′-dimethyl[2,6′-bi-2*H*-1-benzopyran]-4(3*H*)-one*



R = H

$C_{20}H_{18}O_4$ 322.36
CA name defective.

(*S*)-*form* [77263-07-1]
Isol. from *Erythrina abyssinica*. Inhibits cell growth against a metastatic human prostate cancer cell line and down regulate the expression of matrix metalloproteinase-2 (MMP-2) at non toxic concentrations. Exhibits antibacterial activity against *Staphylococcus aureus* and *Bacillus subtilis*. λ_{max} 275 (ϵ 12600); 310 (ϵ 7600) (MeOH). λ_{max} 335 (ϵ 2100) (MeOH/NaOH).

Kamat, V.S. *et al., Heterocycles*, 1981, **15**, 1163-1170 (*S-form, activity*)
Rao, G.V. *et al., Eur. J. Med. Chem. (Chim. Ther.)*, 2009, **44**, 2239-2245 (*Abyssinone I, synth*)
Farmer, R.L. *et al., ACS Med. Chem. Lett.*, 2010, **1**, 400-405 (*S-form, synth, activity*)

Abyssinone III A-13

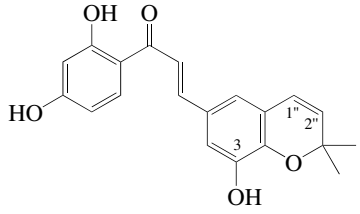
As Abyssinone I, A-12 with
R = $-CH_2CH=(CH_3)_2$
$C_{25}H_{26}O_4$ 390.478

(*S*)-*form* [77263-09-3]
Isol. from *Erythrina abyssinica*. Shows antimicrobial activity. Inhibits cell growth against a metastatic human prostate cancer cell line and down regulate the expression of matrix metalloproteinase-2 (MMP-2) at non toxic concentrations.

Kamat, V.S. *et al., Heterocycles*, 1981, **15**, 1163-1170 (*Abyssinone III*)
Farmer, R.L. *et al., ACS Med. Chem. Lett.*, 2010, **1**, 400-405 (*S-form, synth, activity*)

Abyssinone A A-14

[1039071-39-0]



$C_{20}H_{18}O_5$ 338.359
Flavonoid numbering shown. Constit. of the stem bark of *Erythrina abyssinica*. Cytotoxic to human Caco2 colorectal cancer cells. Yellow powder. λ_{max} 256 (log ϵ 4.04); 298 (log ϵ 3.97); 383 (log ϵ 4.3) (MeOH).

3-Me ether: [1258290-39-9] ***3*-O-*Methylabyssinone A***
$C_{21}H_{20}O_5$ 352.386
Constit. of the roots of *Lonchocarpus nicou*. Amorph. yellow powder. λ_{max} 242; 258 (sh); 298; 362 (sh); 387 (MeOH).

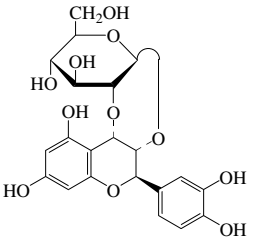
1″,2″-Dihydro, 2″ξ-hydroxy: [1039071-43-6] ***Abyssinone B***
$C_{20}H_{20}O_6$ 356.374
Constit. of the stem bark of *Erythrina abyssinica*. Cytotoxic to human Caco2 colorectal cancer cells. Yellow powder. $[\alpha]_D^{25}$-3.4 (c, 0.1 in MeOH). λ_{max} 209 (log ϵ 4.32); 266 (log ϵ 3.81); 382 (log ϵ 4.3) (MeOH).

1″,2″-Dihydro, 1″ξ,2″ξ-dihydroxy: [1039071-46-9] ***Abyssinone C***
$C_{20}H_{20}O_7$ 372.374
Constit. of the stem bark of *Erythrina abyssinica*. Cytotoxic to human Caco2 colorectal cancer cells. Yellow powder. $[\alpha]_D^{22}$-1 (c, 0.1 in MeOH). λ_{max} 204 (log ϵ 4.35); 260 (log ϵ 4.14); 380 (log ϵ 4.29) (MeOH).

Cui, L. *et al., Planta Med.*, 2008, **74**, 422-426 (*Abyssinones A-C, activity*)
Lawson, M.A. *et al., Tet. Lett.*, 2010, **51**, 6116-6119 (*3-O-Methylabyssinone A*)

Aceronidin A-15

[894078-20-7]



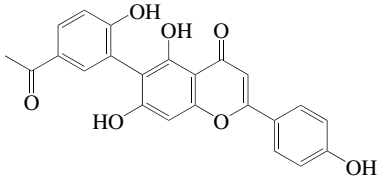
Absolute Configuration

$C_{21}H_{22}O_{11}$ 450.398
Constit. of green mature *Malpighia emarginata*. Used in cosmetic and skin preparations. Antioxidant. Cryst. $[\alpha]_D^{20}$ +46.9 (c, 1 in MeOH). λ_{max} 278 (MeOH).

Pat. Coop. Treaty (WIPO), 2006, 2006 067 985 (*use*)
Kawaguchi, M. *et al., Biosci., Biotechnol., Biochem.*, 2007, **71**, 1130-1135 (*Malpighia emarginata constit, struct*)

6-(5-Acetyl-2-hydroxyphenyl)-4′,5,7-trihydroxyflavone A-16

*6-(5-Acetyl-2-hydroxyphenyl)-5,7-dihydroxy-2-(4-hydroxyphenyl)-4*H*-1-benzopyran-4-one. 6-(5-Acetyl-2-hydroxyphenyl)apigenin* [1180675-12-0]

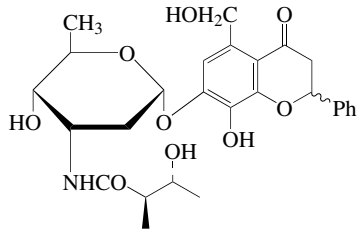


$C_{23}H_{16}O_7$ 404.375
Constit. of *Selaginella tamariscina*. Amorph. yellow powder. λ_{max} 270; 329 (no solvent reported).

Liu, J.F. *et al., Chin. Chem. Lett.*, 2009, **20**, 595-597 (*Selaginella tamariscina constit, struct*)

Actinoflavoside A-17

[194873-80-8]

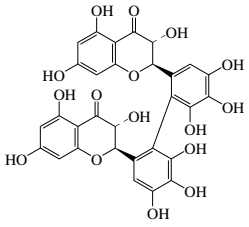


$C_{27}H_{33}NO_9$ 515.559
Prod. by a marine *Streptomyces* sp. Noncryst. solid. $[\alpha]_D$-110 (c, 1.3 in MeOH). λ_{max} 232 (ϵ 19000); 282 (ϵ 18000); 325 (ϵ 4500) (MeOH).

Jiang, Z.-D. *et al., Tet. Lett.*, 1997, **38**, 5065-5068 (*Actinoflavoside, struct*)

Acuminatanol A-18

3,3′,3″,3‴,4′,4‴,5,5′,5″,5‴,7,7″-Dodecahydroxy-2′,2‴-biflavanone [948884-38-6]



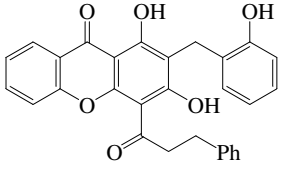
Relative Configuration

$C_{30}H_{22}O_{16}$ 638.494
Constit. of the stems of *Trichoscypha acuminata*. Amorph. solid.

Hu, J.-F. *et al., Tet. Lett.*, 2007, **48**, 5747-5749 (*Trichoscypha acuminata constit*)

Acumitin A-19

[723303-00-2]

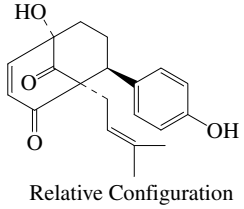


$C_{29}H_{22}O_6$ 466.489
Constit. of the roots of *Uvaria acuminata*. Cytotoxic to human promyelocytic leukaemia HL-60 cells. Cryst. ($CHCl_3$). Mp 186-187°.

Ichimaru, M. *et al., Chem. Pharm. Bull.*, 2004, **52**, 138-141 (*Acumitin, activity*)

Acutifolin A† A-20

[350221-53-3]



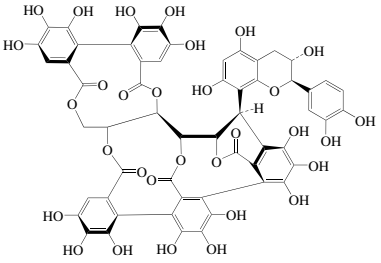
Relative Configuration

$C_{20}H_{22}O_4$ 326.391
Rearranged flavan. Constit. of the bark of *Brosimum acutifolium*. Amorph. solid. $[\alpha]_D^{22}$ +94.7 (c, 0.38 in MeOH). λ_{max} 275 (log ϵ 3.66); 280 (sh) (log ϵ 3.63) (MeOH).

Takashima, J. *et al., J. Nat. Prod.*, 2001, **64**, 1493-1496 (*Acutifolin A*)

Acutissimin A A-21

[108906-66-7]

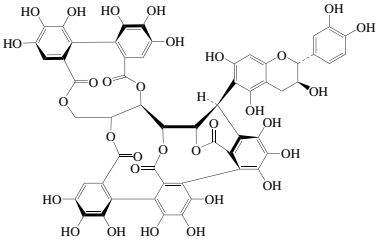


$C_{56}H_{38}O_{31}$ 1206.898
Isol. from Fagaceous plants *Quercus acutissima*, *Quercus miyagii*, *Quercus stenophylla*, *Castanea crenata*, etc. Exhibits moderate selective cytotoxicity against PRMI-7951 melanoma cells. Off-white amorph. powder + 3½H_2O or 5H_2O. $[\alpha]_D^{32}$-74 (c, 1.2 in Me_2CO). λ_{max} 225 (ϵ 85100); 275 (ϵ 28800) (MeOH) (Berdy).

Ishimaru, K. *et al., Chem. Pharm. Bull.*, 1987, **35**, 602-610 (*Acutissimin A*)
Nonaka, G. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2151-2156 (*struct*)
Kashiwada, Y. *et al., J. Nat. Prod.*, 1992, **55**, 1033-1043 (*activity*)
Petit, E. *et al., Angew. Chem., Int. Ed.*, 2013, **52**, 11530-11533 (*Acutissimin A*)

Acutissimin B A-22

[108906-65-6]

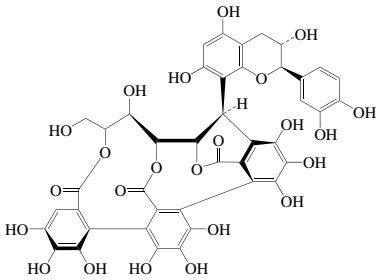


$C_{56}H_{38}O_{31}$ 1206.898
Constit. of Fagaceous plants *Quercus acutissima*, *Quercus miyagii*, *Quercus stenophylla*, *Quercus petraea* and *Castanea sativa*. Off-white amorph. powder + 3.5H_2O. $[\alpha]_D^{32}$-5.5 (c, 0.84 in Me_2CO).

Ishimaru, K. *et al., Chem. Pharm. Bull.*, 1987, **35**, 602-610 (*Acutissimin B*)
Nonaka, G. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2151-2156 (*struct*)
Konig, M. *et al., J. Nat. Prod.*, 1994, **57**, 1411-1415 (*Quercus petraea constit*)
Do Carmo, M. *et al., Ind. Crops Prod.*, 2010, **31**, 301-311 (*Castanea sativa constit*)
Petit, E. *et al., Angew. Chem., Int. Ed.*, 2013, **52**, 11530-11533 (*Acutissimin B*)

Acutissimin C A-23

[108907-40-0]



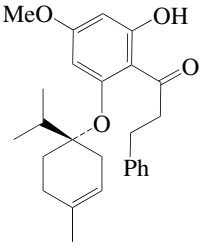
$C_{42}H_{32}O_{23}$ 904.701
Isol. from *Quercus mongolica* var. *grosseserrata* and from *Anogeissus accuminata*. Off-white amorph. powder + 6H_2O. $[\alpha]_D^{23}$-8 (c, 0.40 in Me_2CO). $[\alpha]_D^{23}$-23.2 (c, 0.76 in MeOH).

3′-Hydroxy: [247094-21-9] ***Catappanin A***
$C_{42}H_{32}O_{24}$ 920.7
Constit. of the bark of *Terminalia catappa*. Amorph. pale brown powder + 1½H_2O. $[\alpha]_D^{21}$ +15.2 (c, 1.2 in MeOH).

Ishimaru, K. *et al., Chem. Pharm. Bull.*, 1988, **36**, 3319-3327 (*Acutissimin C, struct*)
Nonaka, G.-I. *et al., Chem. Pharm. Bull.*, 1990, **38**, 2151-2156 (*struct*)
Lin, T.-C. *et al., J. Chin. Chem. Soc. (Taipei)*, 1999, **46**, 613-618 (*Catappanin A*)

Adunctin A A-24

[151484-73-0]

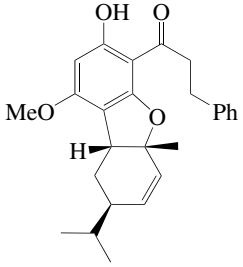


$C_{26}H_{32}O_4$ 408.536
Constit. of the leaves of *Piper aduncum*. Oil. $[\alpha]_D^{20}$ +17 (c, 0.8 in MeOH). λ_{max} 288 (ϵ 16596); 325 (ϵ 3890) (MeOH).

Orjala, J. *et al., Helv. Chim. Acta*, 1993, **76**, 1481-1488 (*Adunctin A, struct*)

Adunctin B A-25

[151484-74-1]



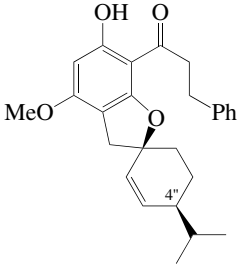
Relative Configuration

$C_{26}H_{30}O_4$ 406.521
Constit. of the leaves of *Piper aduncum*. Needles (hexane). Mp 63°. $[\alpha]_D^{20}$ +36.1 (c, 0.4 in MeOH). λ_{max} 285 (ϵ 24547); 340 (ϵ 3980) (MeOH) (Berdy).

Orjala, J. *et al., Helv. Chim. Acta*, 1993, **76**, 1481-1488 (*Piper aduncum constit*)
Arimitsu, K. *et al., Tet. Lett.*, 2011, **52**, 7046-7048 (*synth*)

Adunctin C A-26

[151484-75-2]



Relative Configuration

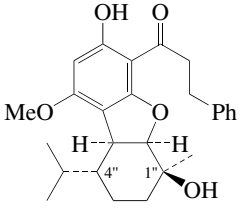
$C_{26}H_{30}O_4$ 406.521
Constit. of the leaves of *Piper aduncum*. Yellow prisms (hexane). Mp 78°. $[\alpha]_D^{20}$ -71.4 (c, 0.7 in MeOH). λ_{max} 285 (ϵ 53700); 340 (ϵ 2570) (MeOH) (Berdy).

4″-Epimer: [151593-45-2] ***Adunctin D***
$C_{26}H_{30}O_4$ 406.521
Constit. of the leaves of *Piper aduncum*. Yellow powder. $[\alpha]_D^{20}$ +31 (c, 0.5 in MeOH). λ_{max} 285 (ϵ 28840); 340 (ϵ 3310) (MeOH) (Berdy).

Orjala, J. *et al., Helv. Chim. Acta*, 1993, **76**, 1481-1488 (*Adunctins C,D, struct*)

Adunctin E A-27

[151515-27-4]



Relative Configuration

$C_{26}H_{32}O_5$ 424.536
Constit. of the leaves of *Piper aduncum*, *Piper hostmannianum* var. *berbicense* and rhizomes of *Etlingera littoralis*. Amorph. powder. $[\alpha]_D^{20}$ +16.3 (c, 0.6 in MeOH). λ_{max} 232 (log ϵ 3.7); 285 (log ϵ 3.8) (MeOH).

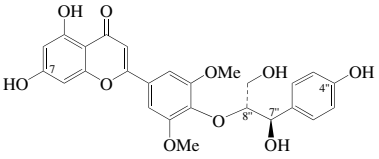
1″-Hydroperoxide: [1355036-17-7] ***Etlinglittoralin***
$C_{26}H_{32}O_6$ 440.535
Constit. of fresh rhizomes of *Etlingera littoralis*. Amorph. Mp 102-103.5°. $[\alpha]_D^{25}$-22 (c, 0.006 in $CHCl_3$).

4″-Epimer: [943896-08-0] ***Hostmanin C***
$C_{26}H_{32}O_5$ 424.536
Constit. of the leaves of *Piper hostmannianum* var. *berbicense*. Amorph. powder. $[\alpha]_D^{25}$ +4 (c, 0.17 in MeOH). λ_{max} 232 (log ϵ 3.7); 285 (log ϵ 3.8) (MeOH).

Orjala, J. *et al., Helv. Chim. Acta*, 1993, **76**, 1481-1488 (*Adunctin E*)
Portet, B. *et al., Phytochemistry*, 2007, **68**, 1312-1320 (*Hostmanin C*)
Jeerapong, C. *et al., Heterocycles*, 2011, **83**, 849-854 (*Etlinglittoralin, Adunctin E*)

Aegicin A-28

*5,7-Dihydroxy-2-[4-[2-hydroxy-1-hydroxymethyl-2-(4-hydroxyphenyl)ethoxy]-3,5-dimethoxyphenyl]-4*H*-1-benzopyran-4-one, 9CI. Tricin 4′-*O*-(β-4-hydroxyphenylglyceryl) ether*



(7″*R**,8″*R**)-*form*

$C_{26}H_{24}O_{10}$ 496.47
Flavonolignan.

(7″*R,8″*R**)-*form*** [1217897-50-1]
threo-*form*. ***Calquiquelignan E***. Constit. of the stems of *Calamus quinquesetinervius*. Amorph. powder. Mp 247°. $[\alpha]_D^{25}$ + 27 (c, 0.48 in MeOH). λ_{max} 201; 271; 329 (sh) (MeOH).

2S,3-Dihydro: [1217897-49-8] *Dihydrotricin 4′-O-(β-4-hydroxyphenylglyceryl) ether*. ***Calquiquelignan C***
$C_{26}H_{26}O_{10}$ 498.485
Constit. of the stems of *Calamus quinquesetinervius*. Pale yellow powder. Mp 146°. $[\alpha]_D^{25}$-16 (c, 0.06 in MeOH). λ_{max} 202; 230; 286; 330 (sh) (MeOH).

3″-Methoxy: [369390-51-2] *Tricin 4′-O-(β-guaiacylglyceryl) ether*. ***Salcolin A***
$C_{27}H_{26}O_{11}$ 526.496
Constit. of *Hyparrhenia hirta*, *Salsola collina*, *Sasa veitchii* and *Avena sativa*. Potent platelet aggregation inhibitor and hydroxyl radical scavenger. Yellow solid. $[\alpha]_D^{24}$-10 (c, 0.05 in MeOH). λ_{max} 272; 287 (sh); 303 (sh); 334 (MeOH).

3″-Methoxy, 7-O-β-D-glucopyranoside: [462100-43-2]
$C_{33}H_{36}O_{16}$ 688.638
Constit. of the leaves of *Hyparrhenia hirta*. Yellow solid. λ_{max} 270; 287 (sh); 340 (MeOH).

3″-Methoxy, 9″-Ac: [629646-28-2]
$C_{29}H_{28}O_{12}$ 568.533
Constit. of the leaves of *Sasa veitchii*. Amorph. yellow solid. $[\alpha]_D^{20}$-48.5 (c, 0.11 in MeOH). λ_{max} 310 (log ϵ 4.06) (MeOH).

3″-Methoxy, 9″-O-(4-hydroxy-E-cinnamoyl): [629646-41-9]
$C_{36}H_{32}O_{13}$ 672.641
Constit. of the leaves of *Sasa veitchii*. Amorph. yellow solid. $[\alpha]_D^{20}$ +52.1 (c, 0.48 in MeOH). λ_{max} 312 (log ϵ 4.58) (MeOH).

3″-Methoxy, 7″-Me ether, 9″-Ac: [629646-35-1]
$C_{30}H_{30}O_{12}$ 582.56
Constit. of the leaves of *Sasa veitchii*. Amorph. yellow solid. $[\alpha]_D^{20}$ +5.8 (c, 0.41 in MeOH). λ_{max} 272 (log ϵ 4.39); 322 (log ϵ 4.4) (MeOH).

3″-Methoxy, 2S,3-dihydro: [1217897-48-7] *Dihydrotricin 4′-O-(β-guaiacylglyceryl) ether*. ***Calquiquelignan B***
$C_{27}H_{28}O_{11}$ 528.512
Constit. of the stems of *Calamus quinquesetinervius*. Pale orange powder. Mp 118°. $[\alpha]_D^{25}$ +70 (c, 1.1 in MeOH). λ_{max} 203; 230; 288; 330 (sh) (MeOH).

(7″*R,8″*S**)-*form*** [65870-44-2]
erythro-*form*. ***Calquiquelignan D***.
Constit. of *Aegilops ovata*, *Calamus quinquesetinervius* and *Sinocalamus affinis* (preferred genus name *Dendrocalamus*). Cryst. ($CHCl_3$/MeOH). Mp 235-236° (218°). $[\alpha]_D^{25}$-58 (c, 0.48 in MeOH) (Calquiquelignan D).

Penta-Ac: Mp 163-164°.

3″-Methoxy: [369390-52-3] ***Salcolin B***.
Constit. of *Hyparrhenia hirta*, *Salsola collina*, *Sasa veitchii* and *Avena sativa*. Yellow solid. $[\alpha]_D^{24}$ +15 (c, 0.05 in MeOH). λ_{max} 271; 288 (sh); 305 (sh); 335 (MeOH).

3″-Methoxy, 7-O-β-D-glucopyranoside: [462100-42-1]
Constit. of the leaves of *Hyparrhenia hirta*. Yellow solid. λ_{max} 270; 287 (sh); 340 (MeOH).

3″-Methoxy, 9″-Ac: [629646-32-8]
Constit. of the leaves of *Sasa veitchii*. Amorph. yellow solid. $[\alpha]_D^{20}$-70 (c, 0.15 in MeOH). λ_{max} 322 (log ϵ 3.94) (MeOH).

3″-Methoxy, 9″-O-(4-hydroxy-E-cinnamoyl): [629646-44-2]
Constit. of the leaves of *Sasa veitchii*. Amorph. yellow solid. $[\alpha]_D^{20}$-30.4 (c, 1.3 in dioxan). λ_{max} 310 (log ϵ 4.57) (MeOH).

3″-Methoxy, 7″-Me ether, 9″-Ac: [629646-37-3]
Constit. of the leaves of *Sasa veitchii*. Amorph. yellow solid. $[\alpha]_D^{20}$-13.8 (c, 0.25 in MeOH). λ_{max} 271 (log ϵ 4.21); 335 (log ϵ 4.2) (MeOH).

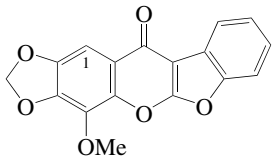
3″-Methoxy, 2S,3-dihydro: [1217897-47-6] ***Calquiquelignan A***
$C_{27}H_{28}O_{11}$ 528.512
Constit. of the stems of *Calamus quinquesetinervius*. Pale yellow powder. Mp 204°. $[\alpha]_D^{25}$-33 (c, 0.21 in MeOH). λ_{max} 203; 230; 288; 330 (sh) (MeOH).

Cooper, R. *et al., Isr. J. Chem.*, 1977, **16**, 12-15 (*Aegicin*)
Syrchina, A.I. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1992, **28**, 155-158 (*Salcolins A,B*)
Bouaziz, M. *et al., Phytochemistry*, 2002, **60**, 515-520 (*Hyparrhenia hirta constits*)
Nakajima, Y. *et al., Tetrahedron*, 2003, **59**, 8011-8015 (*Sasa veitchii constits*)
Wenzig, E. *et al., J. Nat. Prod.*, 2005, **68**, 289-292 (*Salcolins A,B*)

Chang, C.-L. *et al., Phytochemistry*, 2010, **71**, 271-279 (*Calquiquelignans, activity*)

Aervin A A-29

[1169449-60-8]



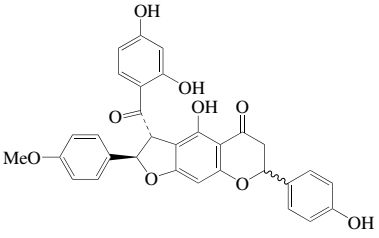
$C_{17}H_{10}O_6$ 310.262
Constit. of *Aerva persica*. Cryst. Mp 265°. λ_{max} 257 (log ϵ 3.91); 284 (log ϵ 4.01); 327 (log ϵ 3.99) ($CHCl_3$).

Demethoxy, 1-methoxy: [1169449-63-1]
Aervin B
$C_{17}H_{10}O_6$ 310.262
Constit. of *Aerva persica*. Cryst. Mp 260°. λ_{max} 255 (log ϵ 4.21); 285 (log ϵ 4.08); 328 (log ϵ 3.69) ($CHCl_3$).

Imran, M. *et al., Magn. Reson. Chem.*, 2009, **47**, 532-536 (*Aervins A,B*)

Afzelone A A-30

*3-(2,4-Dihydroxybenzoyl)-2,3,6,7-tetrahydro-4-hydroxy-7-(4-hydroxyphenyl)-2-(4-methoxyphenyl)-5*H*-furo[3,2-g][1]benzopyran-5-one,CAS* [623147-68-2]

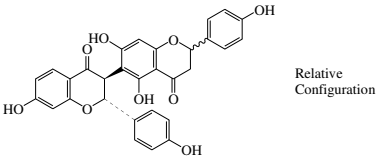


$C_{31}H_{24}O_9$ 540.525
Constit. of the stem bark of *Ochna afzelii*. Pale yellow solid. $[\alpha]_D^{25}$ +193 (c, 0.4 in Me_2CO). λ_{max} 202 (log ϵ 4.67); 220 (log ϵ 4.66); 228 (log ϵ 4.65); 290 (log ϵ 4.52); 326 (sh) (log ϵ 4.16) (EtOH).

Pegnyemb, D.E. *et al., Phytochemistry*, 2003, **64**, 661-665 (*Afzelone A*)

Afzelone B A-31

4′,4‴,5″,7,7″-Pentahydroxy-3,6″-biflavanone [623147-69-3]



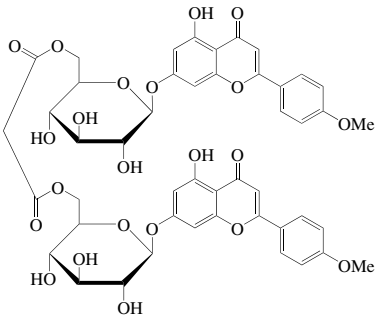
Relative Configuration

$C_{30}H_{22}O_9$ 526.498
Constit. of the stem bark of *Ochna afzelii*. Pale yellow solid. $[\alpha]_D^{25}$-19 (c, 0.6 in Me_2CO). λ_{max} 215 (log ϵ 4.7); 273 (log ϵ 4.2) (EtOH).

Pegnyemb, D.E. *et al., Phytochemistry*, 2003, **64**, 661-665 (*Afzelone B*)

Agastachin A-32

[78897-46-8]

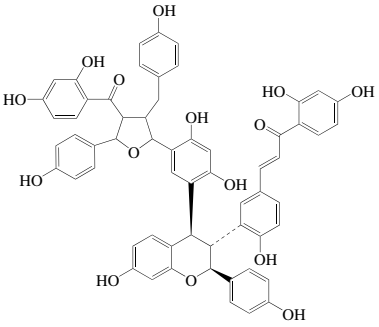


$C_{47}H_{44}O_{22}$ 960.851
Deriv. of 5,7-Dihydroxy-4′-methoxyflavone, D-334. Isol. from *Agastache rugosa*. Pale yellow powder. Mp 192-195°.

Itokawa, H. *et al., Chem. Pharm. Bull.*, 1981, **29**, 1777-1779 (*Agastachin, struct*)

Alatachalcone A-33

[142451-50-1]

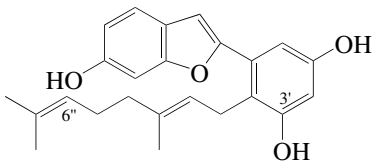


$C_{60}H_{48}O_{15}$ 1009.03
Isol. from the bark of *Lophira alata*. Antitumour promotor. Yellow powder. $[\alpha]_D^{21}$-105 (c, 1 in MeOH). λ_{max} 282 (log ϵ 4.30); 377 (log ϵ 4.32) (MeOH).

Murakami, A. *et al., Biosci., Biotechnol., Biochem.*, 1992, **56**, 769-772 (*Alatachalcone*)

Albafuran A A-34

4-(3,7-Dimethyl-2,6-octadienyl)-5-(6-hydroxy-2-benzofuranyl)-1,3-benzenediol, 9CI. 2-[3,5-Dihydroxy-2-(3,7-dimethyl-2,6-octadienyl)phenyl]-6-hydroxybenzofuran. Alabafuran A [84323-14-8]



$C_{24}H_{26}O_4$ 378.467
Constit. of *Morus alba* and *Morus bombycis*. Mixed inhibitor of recombinant human protein tyrosine phosphatase 1B (PTP1B). Inhibitor of NO prodn. in stimulated RAW 264.7 cells. Inhibits spore germination of *Bipolaris leersiae*. Cryst. Poorly sol. hexane. Mp 150-150.5°. λ_{max} 214 (ϵ 40300); 312 (ϵ 27300) (EtOH) (Berdy).

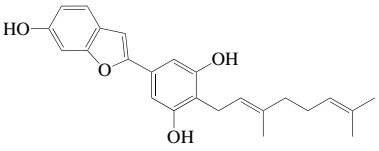
3′-Me ether: [68978-04-1]
Mulberrofuran A
$C_{25}H_{28}O_4$ 392.494
Constit. of *Morus alba*. Shows potential antiinflammatory activity via inhibition of formation of cyclooxygenase products from arachidonate; shows significant activityagainst Gram positive bacteria. Cryst. Mp 100-103°. λ_{max} 216 (ϵ 32500); 311 (ϵ 23400) (EtOH). λ_{max} 328 (ϵ 23400) (EtOH/NaOH) (Berdy).

Δ‴-Isomer, 6″ξ-hydroxy: [1253190-72-5]
Mornigrol D
$C_{24}H_{26}O_5$ 394.466
Constit. of the bark of *Morus nigra*. Shows antiinflammatory and antioxidative activities. Amorph. yellow powder. Mp 92-94°. λ_{max} 212 (log ϵ 4.59); 311 (log ϵ 4.39) (MeOH).

Nomura, T. *et al., Heterocycles*, 1978, **9**, 1593-1601 (*Mulberrofuran A, struct, antibacterial activity*)
Takasugi, M. *et al., Chem. Lett.*, 1982, **11**, 1221-1222 (*Albafuran A, struct, antifungal activity*)
Kimura, Y. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1223-1227 (*Mulberrofuran A, arachidonate metabolism inhibitor*)
Hoang, D.M. *et al., Bioorg. Med. Chem. Lett.*, 2009, **19**, 6759-6761 (*Morus bombycis constit, struct, PTP1B inhibitor*)
Jeong, S.H. *et al., J. Agric. Food Chem.*, 2009, **57**, 1195-1203 (*Albafuran A, isol*)
Wang, L. *et al., J. Asian Nat. Prod. Res.*, 2010, **12**, 431-437 (*Mornigrol D, struct, antiinflammatory activity, antioxidative activity*)
Yang, Z.-G. *et al., Molecules*, 2011, **16**, 6010-6022 (*Albafuran A, NO prodn inhibitor*)

Albafuran B A-35

2-(3,7-Dimethyl-2,6-octadienyl)-5-(6-hydroxy-2-benzofuranyl)-1,3-benzenediol, 9CI. 2-[3,5-Dihydroxy-4-(3,7-dimethyl-2,6-octadienyl)phenyl]-6-hydroxybenzofuran [84323-15-9]

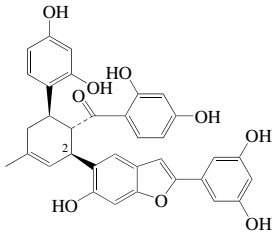


$C_{24}H_{26}O_4$ 378.467
Constit. of *Morus alba* and *Morus nigra*. Inhibits spore germination of *Bipolaris leersiae*. Cryst. Poorly sol. hexane. Mp 158-158.5°. λ_{max} 219 (ϵ 27000); 320 (ϵ 34000); 335 (ϵ 29000) (EtOH) (Berdy).

Takasugi, M. *et al., Chem. Lett.*, 1982, **11**, 1221-1222 (*Albafuran B, struct, antifungal activity*)

Albafuran C A-36

[84323-16-0]



$C_{34}H_{28}O_9$ 580.59

Constit. of *Morus alba* and of *Morus nigra*. Shows antifungal props. Inhibits spore germination of *Bipolaris leersiae*. Amorph. Sol. MeOH, Me_2CO, $CHCl_3$; poorly sol. hexane. $[\alpha]_D$-302 (EtOH). λ_{max} 216 (ϵ 47000); 284 (ϵ 22300); 294 (ϵ 19600); 322 (ϵ 31700); 336 (ϵ 25700) (EtOH) (Berdy).

2-Epimer: [1001325-03-6] ***Australisin C***

$C_{34}H_{28}O_9$ 580.59

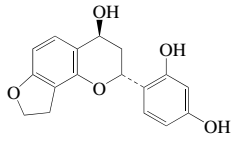
Constit. of the stem bark of *Morus australis*. Shows cytotoxic activity against human colon and ovarian cancer cells. Yellow powder. $[\alpha]_D^{20}$ +340 (c, 0.27 in MeOH). Abs. config. known. λ_{max} 206 (log ϵ 4.87); 216 (sh) (log ϵ 4.83); 283 (log ϵ 4.46); 323 (log ϵ 4.67); 336 (sh) (log ϵ 4.62) (MeOH).

Takasugi, M. *et al., Chem. Lett.*, 1982, 1223-1224 (*Albafuran C, struct, antifungal activity*)

Zhang, Q.-J. *et al., Chem. Biodiversity*, 2007, **4**, 1533-1540 (*Australisin C, struct, abs config, cytotoxicity*)

Albafuroflavan A A-37

*2-(2,4-Dihydroxyphenyl)-3,4,8,9-tetrahydro-2*H*-furo[2,3-*h*]-1-benzopyran-4-ol* [1245744-43-7]



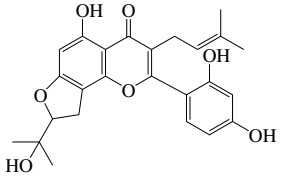
$C_{17}H_{16}O_5$ 300.31

Constit. of the leaves of *Morus alba*. Amorph. brown powder. Mp 106-108°. $[\alpha]_D^{20}$-38 (c, 0.14 in MeOH). λ_{max} 210 (log ϵ 4.69); 235 (log ϵ 3.93); 277 (log ϵ 3.56); 286 (log ϵ 3.58) (MeOH).

Yang, Y. *et al., J. Asian Nat. Prod. Res.*, 2010, **12**, 194-198 (*Albafuroflavan A*)

Albanin C A-38

[73343-16-0]



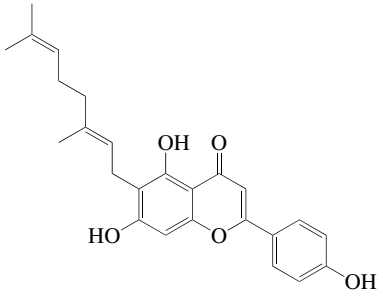
$C_{25}H_{26}O_7$ 438.476

Constit. of *Morus alba* infected with *Fusarium solani*. Phytoalexin.

Takasugi, M. *et al., CA*, 1980, **92**, 160540d (*Albanin C*)

Albanin D A-39

*6-(3,7-Dimethyl-2,6-octadienyl)-5,7-dihydroxy-2-(4-hydroxyphenyl)-4*H*-1-benzopyran-4-one,* 9CI. *6-Geranyl-4′,5,7-trihydroxyflavone. 6-Geranylapigenin* [134955-26-3]



$C_{25}H_{26}O_5$ 406.477

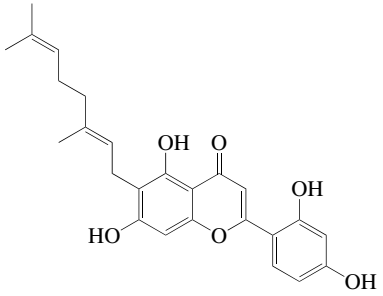
Struct. revised in 1991. Isol. from *Morus alba*. Pale yellow prisms (Me_2CO). Mp 205-207°. λ_{max} 255; 288; 355 (EtOH) (Berdy).

Fukai, T. *et al., Heterocycles*, 1991, **32**, 499-510 (*Albanin D, synth, struct*)

Kumano, T. *et al., Bioorg. Med. Chem.*, 2008, **16**, 8117-8126 (*6-Geranylapigenin, chemoenzymatic synth*)

Albanin E A-40

*2-(2,4-Dihydroxyphenyl)-6-(3,7-dimethyl-2,6-octadienyl)-5,7-dihydroxy-4*H*-1-benzopyran-4-one,* 9CI. *6-Geranyl-2′,4′,5,7-tetrahydroxyflavone. 6-Geranylnorartocarpetin* [134955-27-4]



$C_{25}H_{26}O_6$ 422.477

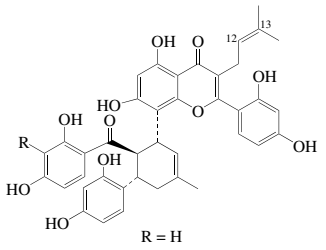
Struct. revised in 1991. Constit. of *Morus alba* and *Morus nigra*. Pale yellow prisms (C_6H_6/Me_2CO). Mp 174-177°. λ_{max} 269 (ϵ 13100); 348 (ϵ 11400) (MeOH) (Berdy). λ_{max} 213 (ϵ 14454); 252 (ϵ 5248); 271 (ϵ 6026); 351 (ϵ 8710) (EtOH).

Fukai, T. *et al., Heterocycles*, 1991, **32**, 499-510 (*synth, revised struct*)

Wang, L. *et al., J. Asian Nat. Prod. Res.*, 2010, **12**, 431-437 (*Morus nigra constit*)

Albanin F A-41

Kuwanon G. Moracenin B [75629-19-5]



$C_{40}H_{36}O_{11}$ 692.718

Abs. configs. do not appear certain. All isolates strongly laevorotatory. Authors' numbering shown. Constit. of the bark of *Morus alba*, also from *Morus australis*, *Morus bombycis*, *Morus lhou* and *Morus nigra*. Bombesin receptor antagonist. Antifungal, antihypertensive agent. Amorph. $[\alpha]_D$-529 (MeOH). Log P 5.13 (calc). λ_{max} 208 (ϵ 65000); 265 (ϵ 9300); 319 (ϵ 14300) (EtOH).

12,13-Dihydro, 13-hydroxy: [78277-79-9] ***Moracenin D***

$C_{40}H_{38}O_{12}$ 710.733

Constit. of the root bark of *Morus* sp. Hypotensive agent. Inhibitor of mushroom tyrosinase. Amorph. yellow powder. $[\alpha]_D^{18}$-419 (c, 0.16 in MeOH). $[\alpha]_D$-388 (c, 0.25 in MeOH). Log P 3.41 (calc). λ_{max} 209 (ϵ 56234); 265 (ϵ 28184); 320 (ϵ 13804) (MeOH).

[79056-24-9]

Takasugi, M. *et al., Chem. Lett.*, 1980, **9**, 1577-1580 (*Morus alba constit*)

Oshima, Y. *et al., Heterocycles*, 1981, **16**, 979-982 (*Moracenin D*)

Nomura, T. *et al., Heterocycles*, 1981, **16**, 983-986 (*Moracenin D*)

Nomura, T. *et al., Planta Med.*, 1983, **49**, 90-94 (*Morus australis constit*)

Hano, Y. *et al., Planta Med.*, 1984, **50**, 127-130 (*Morus lhou constit*)

Hano, Y. *et al., Heterocycles*, 1988, **27**, 2315-2325 (*abs config*)

Mihara, S. *et al., Biochem. Biophys. Res. Commun.*, 1995, **213**, 594-599 (*Kuwanon G, pharmacol*)

Takayama, M. *et al., Rapid Commun. Mass Spectrom.*, 1995, **9**, 383-386 (*ms*)

Park, K.M. *et al., J. Ethnopharmacol.*, 2003, **84**, 181-185 (*Kuwanon G, pharmacol*)

Zheng, Z.-P. *et al., J. Agric. Food Chem.*, 2010, **58**, 5368-5373 (*Morus nigra constit*)

Zheng, Z.-P. *et al., Fitoterapia*, 2012, **83**, 1008-1013 (*Moracenin D, activity*)

Albanin G A-42

Kuwanon H. Moracenin A [76472-87-2]

As Albanin F, A-41 with R $=-CH_2CH=C(CH_3)_2$

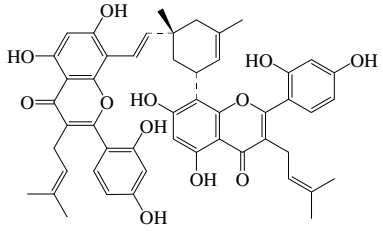
$C_{45}H_{44}O_{11}$ 760.836

Constit. of *Morus alba*. Also isol. from *Morus australis*, *Morus bombycis*, *Morus lhou* and *Morus nigra*. Bombesin receptor antagonist. Antifungal, antihypertensive agent. Inhibitor of mushroom tyrosinase. $[\alpha]_D$-455 (MeOH). Log P 7.13 (uncertain value) (calc).

2‴-Deoxy: [886212-63-1] ***Mongolicin D***
$C_{45}H_{44}O_{10}$ 744.837
Constit. of stem and bark of *Morus mongolica*. Exhibits weak antioxidative and antiinflammatory activity. Amorph. yellow powder. $[\alpha]_D^{25}$-227 (c, 0.11 in MeOH). λ_{max} 205; 264; 320 (MeOH).

Takasugi, M. *et al., Chem. Lett.*, 1980, 1577-1580 (*Albanin G, Morus alba constit, struct*)
Nomura, T. *et al., Planta Med.*, 1983, **49**, 90-94 (*Kuwanon H, Morus australis constit*)
Hano, Y. *et al., Planta Med.*, 1984, **50**, 127-130 (*Kuwanan H, Morus ilou constit*)
Mihara, S. *et al., Biochem. Biophys. Res. Commun.*, 1995, **213**, 594-599 (*pharmacol*)
Kang, J. *et al., Planta Med.*, 2006, **72**, 52-59 (*Mongolicin D, activity*)
Zheng, Z.-P. *et al., J. Agric. Food Chem.*, 2010, **58**, 5368-5373 (*activity*)

Albanin H A-43

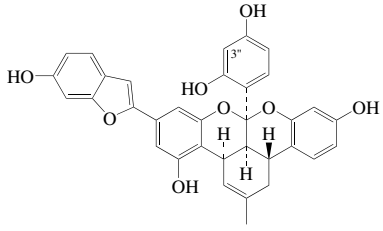


$C_{50}H_{48}O_{12}$ 840.922
Constit. of *Morus alba*. Antifungal agent. Yellow cryst. Mp 215° dec. Racemic.

Nomura, T. *et al., Prog. Chem. Org. Nat. Prod.*, 1988, **53**, 87-201 (*rev*)

Albanol A A-44

Mulberrofuran G [87085-00-5]



$C_{34}H_{26}O_8$ 562.575
Constit. of *Morus lhou*, *Morus alba*, *Morus mongolica* and *Broussonetia papyrifera*. Used in oral care for preventing growth of bacteria. Exhibits antibacterial activity against *Micrococcus luteus* ATCC 9341, *Bacillus subtilis* PCI 219 and MRSA K3. Inhibitor of mushroom tyrosinase. Amorph. powder. $[\alpha]_D^{22}$ +546 (c, 0.03 in MeOH) (+137.2). $[\alpha]_D^{25}$ + 137.17 (c, 0.20 in MeOH). λ_{max} 223 (ϵ 42658); 285 (ϵ 19498); 321 (ϵ 37153); 335 (ϵ 31623) (EtOH).

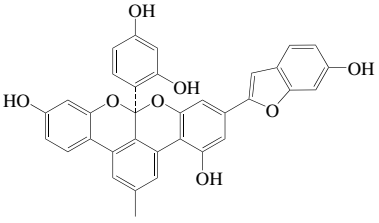
3″-(3-Methyl-2-butenyl): [89200-00-0] ***Mulberrofuran F***
$C_{39}H_{34}O_8$ 630.693
From *Morus lhou*. Amorph. powder. $[\alpha]_D^{23}$ +513 (c, 0.024 in MeOH).

Penta-Me ether: [87085-01-6]
Needles. Mp 177-178°.

Rao, A.V.R. *et al., Tet. Lett.*, 1983, **24**, 3013-3016 (*cryst struct*)
Fukai, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3195-3204 (*uv*)
Japan. Pat., 1998, 98 07 555 (*Morus constit, activity*)
Lee, D. *et al., J. Nat. Prod.*, 2001, **64**, 1286-1293 (*Broussonetia papyrifera constit*)
Fukai, T. *et al., Fitoterapia*, 2005, **76**, 708-711 (*activity*)
Kang, J. *et al., Planta Med.*, 2006, **72**, 52-59 (*Morus mongolica constit*)
US Pat., 2008, 2008 287 525 (*Mulberrofuran G, use*)
Kikuchi, T. *et al., Chem. Pharm. Bull.*, 2010, **58**, 568-571 (*Morus alba constit*)
Zheng, Z.-P. *et al., J. Agric. Food Chem.*, 2010, **58**, 5368-5373 (*activity*)

Albanol B A-45

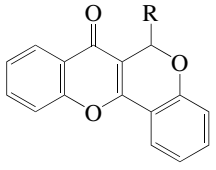
[87084-99-9]



$C_{34}H_{22}O_8$ 558.543
Artifact derived from Mulberrofuran I. Constit. of bark and root of *Morus alba*. Exhibits antibacterial activity against *Micrococcus luteus* ATCC 9341, *Bacillus subtilis* PCI 219, and MRSA K3. Yellow plates. Mp 248° dec. λ_{max} 284 (ϵ 22909); 318 (ϵ 33884); 332 (ϵ 50119); 347 (ϵ 66069) (EtOH).

Rao, A.V.R. *et al., Tet. Lett.*, 1983, **24**, 3013-3016 (*Morus alba constit, config, uv*)
Kimura, Y. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1223-1227 (*Morus alba constit*)
Hano, Y. *et al., Heterocycles*, 1989, **28**, 745-750 (*Albanol B*)
Fukai, T. *et al., Fitoterapia*, 2005, **76**, 708-711 (*activity*)

6-Alkyl-6*H*,7*H*-[1]benzopyrano[4,3-*b*]benzopyran-7-ones A-46



6-Decyl-6*H*,7*H*-[1]benzopyrano[4,3-*b*]benzopyran-7-one [1087081-68-2]
$C_{26}H_{30}O_3$ 390.521
Constit. of *Conchocarpus heterophyllus.*

6-Dodecyl-6*H*,7*H*-[1]benzopyrano[4,3-*b*]benzopyran-7-one [1087081-71-7]
$C_{28}H_{34}O_3$ 418.575
Constit. of *Conchocarpus heterophyllus.*

6-Heptadecyl-6*H*,7*H*-[1]benzopyrano[4,3-*b*]benzopyran-7-one [1087081-74-0]
$C_{33}H_{44}O_3$ 488.709
Constit. of *Conchocarpus heterophyllus.*

6-Octadecyl-6*H*,7*H*-[1]benzopyrano[4,3-*b*]benzopyran-7-one [1087081-80-8]
Constit. of *Conchocarpus heterophyllus.*

16,17-Didehydro: [1087081-77-3] *6-(16-Octadecenyl)-6*H*,7*H*-[1]benzopyrano[4,3-b]benzopyran-7-one*
$C_{34}H_{44}O_3$ 500.72
Constit. of *Conchocarpus heterophyllus.*

Ambrozin, A.R.P. *et al., Quim. Nova*, 2008, **31**, 740-743 (*Conchocarpus heterophyllus constits*)

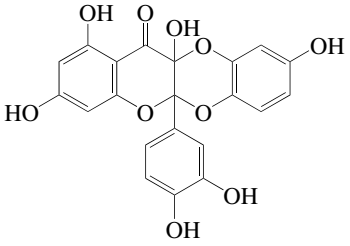
Alliaroside A-47

$C_{24}H_{22}O_{11}$ 486.431
Struct. unknown. Flavonoid. Prob. a Vicenin (4′,5,7-trihydroxyflavone 6,8-di-*C*-glucoside). Isol. from leaves of *Alliaria officinalis* and *Bryonia dioica*. Fine pale-yellow needles + 2½H_2O. Mp 260-262°. $[\alpha]_D$-66 (c, 1.13 in Py). λ_{max} 272; 335 (EtOH).

Paris, R.R. *et al., C. R. Hebd. Seances Acad. Sci.*, 1962, **254**, 928-929 (*Alliaroside, isol*)
Paris, R.R. *et al., C. R. Seances Acad. Sci., Ser. D*, 1966, **262**, 1372-1374 (*Bryonia dioica constit*)
Seikel, M.K. *et al., Phytochemistry*, 1966, **5**, 439-455 (*Alliaroside*)

Alliuocide G A-48

[1058711-45-7]

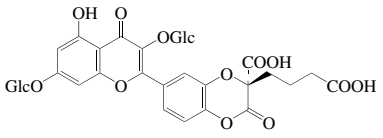


$C_{21}H_{14}O_{10}$ 426.336
Constit. of the outer scales of bulbs of *Allium cepa*. Potent α-amylase inhibitor. Antioxidant. Amorph. brown solid. Mp 292-293°. $[\alpha]_D$+71.4 (c, 0.5 in MeOH). λ_{max} 290 (MeOH).

Mohamed, G.A. *et al., ARKIVOC*, 2008, **xi**, 202-209 (*Alliuocide G*)

Alluceposide A-49

[1016883-43-4]

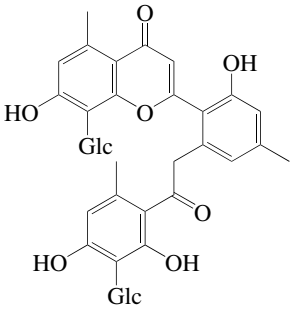


$C_{34}H_{36}O_{22}$ 796.645
Constit. of the bulbs of red onion (*Allium cepa*).

Zaghloul, M.G. *et al., Mansoura J. Pharm. Sci.*, 2007, **23**, 61-71 (*Alluceposide, struct*)

Aloeresin H A-50

[560095-05-8]



$C_{38}H_{42}O_{17}$ 770.74

Constit. of *Aloe ferox*. Exhibits antiinflammatory props. Amorph. powder. Mp 237-238°. $[\alpha]_D^{20}$ +29.3 (c, 0.5 in MeOH). λ_{max} 230 (sh) (log ϵ 4.37); 244 (log ϵ 4.29); 254 (log ϵ 4.25); 299 (log ϵ 4.22) (EtOH).

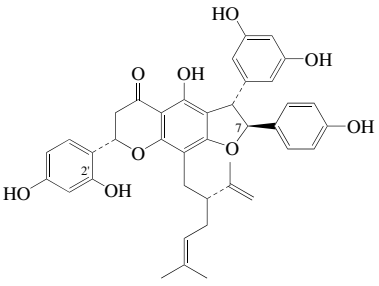
2″-O-*(4-Hydroxy*-E-*cinnamoyl):*
[850761-42-1] ***Aloeresin I***
$C_{47}H_{48}O_{19}$ 916.885
Constit. of *Aloe ferox*. Antiinflammatory agent. Amorph. powder. Mp 227-229° dec. $[\alpha]_D^{20}$-91.7 (c, 0.5 in MeOH). λ_{max} 212 (log ϵ 4.72); 226 (log ϵ 4.66); 254 (log ϵ 4.38); 302 (log ϵ 4.57) (MeOH).

Manitto, P. *et al., Tetrahedron*, 2003, **59**, 401-408 (*Aloeresin H, cd, struct, activity*)

Speranza, G. *et al., Planta Med.*, 2005, **71**, 79-81 (*Aloeresin I*)

Alopecurone A A-51

Alopecurone I [162558-89-6]



$C_{39}H_{38}O_9$ 650.724

Flavonostilbene. Isol. from the roots of *Sophora alopecuroides*. Amorph. yellow solid. $[\alpha]_D^{27}$-13.5 (c, 0.1 in MeOH).

2′-Me ether: [162558-91-0] ***Alopecurone D***
$C_{40}H_{40}O_9$ 664.751
Isol. from the roots of *Sophora alopecuroides*. Yellow oil. $[\alpha]_D^{26}$-10.1 (c, 0.1 in MeOH).

7-Epimer: [162679-30-3] ***Alopecurone B***. *Alopecurone II*
$C_{39}H_{38}O_9$ 650.724
Isol. from the roots of *Sophora alopecuroides*. Amorph. yellow solid. $[\alpha]_D^{27}$-1.5 (c, 0.1 in MeOH).

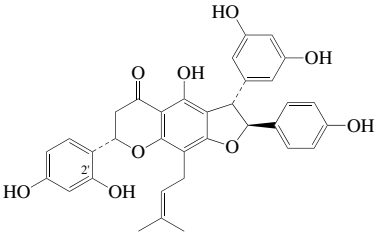
7-Epimer, 2′-Me ether: [162679-31-4]

Alopecurone E
$C_{40}H_{40}O_9$ 664.751
Isol. from the roots of *Sophora alopecuroides*. Amorph. yellow solid.

Iinuma, M. *et al., Phytochemistry*, 1995, **38**, 519 (*isol, uv, ir, pmr, cmr, cd, ms*)

Alopecurone F A-52

[162558-92-1]



$C_{34}H_{30}O_9$ 582.606

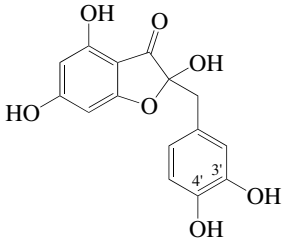
Flavonostilbene. Isol. from the roots of *Sophora alopecuroides*. Amorph. yellow solid.

2′-Deoxy: [162558-90-9] ***Alopecurone C***. *Alopecurone III*
$C_{34}H_{30}O_8$ 566.606
Isol. from the roots of *Sophora alopecuroides*. Powder. $[\alpha]_D^{27}$ +50.7 (c, 0.1 in MeOH).

Iinuma, M. *et al., Phytochemistry*, 1995, **38**, 519-525 (*Alopecurones C,F, struct, cd, abs config*)

Alphitonin A-53

*2-[(3,4-Dihydroxyphenyl)methyl]-2,4,6-trihydroxy-3(2*H*)-benzofuranone, 9CI. 2,3′,4,4′,6-Pentahydroxybenzylcoumaranone* [493-36-7]



$C_{15}H_{12}O_7$ 304.256

No data on abs. configs. in this series. Small opt. rotns. reported forsome compds., others appear to be racemic. Constit. of *Alphitonia excelsa* and *Alphitonia petriei*. Cryst. (H_2O). Mp 222-223°.

Oxime: Mp 224°.

4-O-β-D-Glucopyranoside: [731829-93-9] *Alphitonin 4-glucoside*
$C_{21}H_{22}O_{12}$ 466.398
Constit. of the leaves of *Artocarpus tonkinensis*. Powder (MeOH). Mp 102-105°. $[\alpha]_D^{25}$-87 (c, 0.02 in MeOH).

Penta-Me ether:
Prisms (EtOH). Mp 119-120°.

4-Deoxy: [38681-22-0] *2-[(3,4-Dihydroxyphenyl)methyl]-2,6-dihydroxy-3(2*H*)-benzofuranone, 9CI. 2-Benzyl-2,3′,4′,6-tetrahydroxycoumaran-3-one. 2-(3,4-Dihydroxybenzyl)-2,6-dihydroxy-3(2*H*)-benzofuranone*
[54352-62-4, 89984-19-0]
$C_{15}H_{12}O_6$ 288.256
Isol. from heartwood of *Umtiza listeriana*, *Schinopsis* sp. and from *Xanthocercis zambesiaca*, *Rhus succedanea* and *Trachylobium verrucosum*. Mp 105°. Some isolates reported to be of the (+)-form, others of the racemate.

4-Deoxy, 4′-Me ether: [93012-79-4] *2,3′,6-Trihydroxy-4′-methoxybenzylcoumaran-3-one*
$C_{16}H_{14}O_6$ 302.283
Constit. of *Schinopsis* sp. and quebracho. Cryst. (H_2O). Mp 196°. $[\alpha]_D^{23}$-1.2 (50% Me_2CO aq.).

4-Deoxy, 7-hydroxy: [38076-40-3] *2-[(3,4-Dihydroxyphenyl)methyl]-2,6,7-trihydroxy-3(2*H*)-benzofuranone. 2,3′,4′,6,7-Pentahydroxybenzylcoumaranone.* ***Nigrescin***†
$C_{15}H_{12}O_7$ 304.256
Constit. of heartwood of *Acacia nigrescens*.

4-Deoxy, 7-hydroxy, penta-Me ether:
[38081-21-9]
Cryst. (EtOH). Mp 116°. $[\alpha]_D^{27}$ +4 (c, 0.5 in Me_2CO aq.).

3′-Deoxy: [5989-16-2] ***Maesopsin***
$C_{15}H_{12}O_6$ 288.256
Constit. of the woods of *Alphitonia whitei*, *Maesopsis eminii*, *Colubrina granulosa*, *Berchemia zeyheri*, *Hovenia trichocarea* and roots of *Rheum emodi*. Antioxidant. Exhibits moderate growth inhibitory activity against oral pathogen. Mp 218-220° dec. λ_{max} 211 (log ϵ 4.38); 290 (log ϵ 4.28) (EtOH).

3′-Deoxy, 4-O-β-D-glucopyranoside:
[210050-28-5] *Maesopsin 4-glucoside.* ***Hovetrichoside C***
$C_{21}H_{22}O_{11}$ 450.398
Constit. of *Artocarpus tonkinensis*, *Hovenia trichocarea*, *Ribes rubrum* and *Sonneratia ovata*. Amorph. powder. $[\alpha]_D^{25}$-54.1 (c, 1.9 in MeOH). λ_{max} 210 (log ϵ 4.26); 228 (log ϵ 4.24); 280 (log ϵ 3.87) (MeOH).

3′-Deoxy, 6-O-β-D-glucopyranoside:
[196102-61-1] ***Maesopsin 6-glucoside***
$C_{21}H_{22}O_{11}$ 450.398
Constit. of *Ceanothus americanus*.
Powder (MeOH). $[\alpha]_D^{25}$-43 (c, 0.9 in MeOH).

3′-Deoxy, 4-O-β-D-glucopyranoside, 4′-O-α-L-rhamnopyranoside: [210050-29-6] ***Hovetrichoside D***
$C_{27}H_{32}O_{15}$ 596.541
Constit. of the bark of *Hovenia trichocarea*. Amorph. powder. $[\alpha]_D^{25}$-39.6 (c, 2.1 in Py). λ_{max} 208 (log ϵ 4.01); 230 (log ϵ 3.86); 256 (log ϵ 3.45); 261 (log ϵ 3.39); 280 (log ϵ 3.46) (MeOH).

3′-Deoxy, 4-Me ether: [87582-99-8] *2,4′,6-Trihydroxy-4-methoxybenzylcoumaranone. Carasinaurone.* ***Carpusin***. *Marsupsin*
[83889-80-9 (Marsupsin), 868168-06-3 (Carasinaurone)]
$C_{16}H_{14}O_6$ 302.283

Constit. of *Caragana sinica*, *Glycyrrhiza uralensis*, *Pterocarpus marsupium* and *Xanthocercis zambesiaca*. Antioxidant. Mp 215° (193-195°). $[\alpha]_D^{26}$-4 (c, 0.5 in MeOH) (Marsupsin). $[\alpha]_D^{25}$ +38.9 (c, 0.36 in MeOH) (Carasinaurone). Probably a partial racemate.

3′-Deoxy, tetra-Me ether: [54808-93-4] Prisms (MeOH). Mp 130-131° (118-119°).

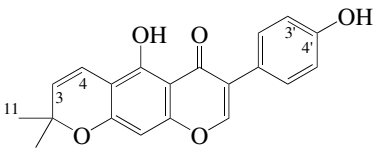
5′-Hydroxy: [226560-96-9] *2,4,6-Trihydroxy-2-[(3,4,5-trihydroxyphenyl)-methyl]-3(2*H*)-benzofuranone. 2,3′,4,4′,5′,6-Hexahydroxyaurone.* ***Amaronol A***
$C_{15}H_{12}O_8$ 320.255
Constit. of the bark of *Pseudolarix amabilis*. Pale yellow powder. Mp 110-112°. $[\alpha]_D^{25}$ +2.3 (c, 1.1 in MeOH). λ_{max} 212 (log ϵ 4.23); 230 (sh); 288 (log ϵ 4.09); 333 (sh) (MeOH).

5′-Hydroxy, 4′-Me ether: [226561-02-0] ***Amaronol B***
$C_{16}H_{14}O_8$ 334.282
Constit. of the bark of *Pseudolarix amabilis*. Pale yellow powder. Mp 94-96°. $[\alpha]_D^{25}$-1.7 (c, 1 in MeOH). λ_{max} 212 (log ϵ 4.23); 230 (sh); 288 (log ϵ 4.15); 335 (sh) (MeOH).

Birch, A.J. *et al., JCS*, 1960, 3593-3599 (*Alphitonia excelsa constit, struct, penta-Me ether*)
Roux, D.G. *et al., Biochem. J.*, 1961, **78**, 785-789 (*4-deoxy 4′-Me ether*)
King, H.G.C. *et al., JCS*, 1961, 3234-3239 (*4-deoxy 4′-Me ether*)
Janes, N.F. *et al., JCS*, 1963, 1356-1363 (*Maesopsin, struct*)
Chopin, J. *et al., C. R. Seances Acad. Sci., Ser. C*, 1966, **263**, 729-731 (*synth, Maesopsin*)
Fourie, T.G. *et al., Phytochemistry*, 1972, **11**, 1763-1770 (*Nigrescin*)
Ferreira, D. *et al., JCS Perkin 1*, 1974, 1492-1498 (*4-deoxy*)
Roitman, J.N. *et al., Phytochemistry*, 1978, **17**, 491-494 (*Maesopsin, struct*)
Maurya, R. *et al., Heterocycles*, 1982, **19**, 2103-2107 (*Carpusin*)
Burger, A.P.N. *et al., Phytochemistry*, 1983, **22**, 2813-2817 (*4-deoxy*)
Bezuidenhout, S.C. *et al., Phytochemistry*, 1988, **27**, 2329-2334 (*4-deoxy*)
Bekker, R. *et al., JCS Perkin 1*, 1996, 2535-2540 (*Maesopsin, config*)
Li, X.-C. *et al., Phytochemistry*, 1997, **46**, 97-102 (*Maesopsin, Maesopsin 6-glucoside, activity*)
Yoshikawa, K. *et al., J. Nat. Prod.*, 1998, **61**, 786-790 (*Hovetrichosides*)
Hatano, T. *et al., Phytochemistry*, 1998, **47**, 287-293 (*Carpusin*)
Li, X.C. *et al., J. Nat. Prod.*, 1999, **52**, 767-769 (*Amaronols*)
Bekker, R. *et al., J. Nat. Prod.*, 2001, **64**, 345-347 (*Maesopsin, Amaronol B, abs config*)
Krenn, L. *et al., J. Nat. Prod.*, 2003, **66**, 1107-1109 (*Rheum emodi constit*)
Thuy, T.T. *et al., Pharmazie*, 2004, **59**, 297-300 (*Alphitonin 4-glucoside, Hovetrichoside C*)
Wang, S. *et al., Helv. Chim. Acta*, 2005, **88**, 2315-2321 (*Carasinaurone*)
Schwarz, B. *et al., J. Agric. Food Chem.*, 2007, **55**, 1394-1404 (*Hovetrichoside C*)
Wu, S.-B. *et al., Biochem. Syst. Ecol.*, 2009, **37**, 1-5 (*Hovetrichoside C*)
Elsinghorst, P.W. *et al., J. Nat. Prod.*, 2011, **74**, 2243-2249 (*Alphitonin, struct*)

Alpinumisoflavone A-54

*5-Hydroxy-7-(4-hydroxyphenyl)-2,2-dimethyl-2*H*,6*H*-benzo[1,2-*b*:5,4-*b′*]dipyran-6-one, 9CI. 5-Hydroxyerythrinin A*
[34086-50-5]



$C_{20}H_{16}O_5$ 336.343
Constit. of *Calopogonium mucunoides*, *Derris* sp., *Rinorea welwitschii*, *Erythrina variegata*, *Erythrina lysistemon*, *Lupinus albus*, *Laburnum alpinum* and *Millettia thonningii*. Cytotoxic. Induces apoptosis and suppresses ERK/MAPK and NF-kB pathwaysin lung tumour cells. Kills snails transmitting schistosomiasis and also the larvae of the parasite itself. Moderately inhibits hyphal development in arbuscular mycorrhizal fungi. Cryst. (Me_2CO/hexane or $CHCl_3$/EtOAc). Sol. MeOH, EtOAc; poorly sol. H_2O, hexane. Mp 213-214°. λ_{max} 282 (ϵ 38200); 356 (ϵ 4200) (MeOH) (Berdy).

*4′-*O*-β-D-Glucopyranoside:* [1383608-66-9]
$C_{26}H_{26}O_{10}$ 498.485
Constit. of the aerial parts of *Genista pichisermolliana*. Amorph. yellow powder.

Di-Ac: [51472-54-9]
Cryst. (MeOH or EtOAc/petrol). Mp 135-137° (219°).

4′-Me ether: [27762-87-4] ***4′-O-Methylalpinumisoflavone***
$C_{21}H_{18}O_5$ 350.37
Constit. of seeds of *Calopogonium mucunoides*, from *Derris*sp. and *Millettia thonningii*.

5-Me ether: [141737-82-8] *5-*O*-Methylalpinumisoflavone.* ***Indicanin C***
$C_{21}H_{18}O_5$ 350.37
Constit. of *Millettia thonningii* and from the root bark of *Erythrina indica*. Cryst. (petrol). Mp 199-200° (natural) Mp 134-135° (synthetic). λ_{max} 225 (log ϵ 4.22); 282 (log ϵ 4.7); 288 (log ϵ 4.78) (MeOH).

Di-Me ether: [34086-56-1] ***Di-O-methylalpinumisoflavone***
$C_{22}H_{20}O_5$ 364.397
Constit. of seeds of *Derris robusta* and from *Millettia thonningii*. Cryst. (C_6H_6). Mp 119-120°.

*4′-*O*-(3-Methyl-2-butenyl):* [85985-76-8] ***4′-Dimethylallylalpinumisoflavone.*** *2′-Deoxyisoauriculatin*
$C_{25}H_{24}O_5$ 404.462
Constit. of *Derris* sp. and of *Millettia auriculata*. Pale yellow needles. Mp 126-128°.

*4′-*O*-(3-Methyl-2-butenyl), 5-Me ether:* [165253-35-0] ***5-O-Methyl-4′-O-prenylalpinumisoflavone***
$C_{26}H_{26}O_5$ 418.488
Constit. of the root bark of *Millettia thonningii*. Cryst. (petrol). Mp 107-108°.

3,4-Epoxide: [166197-33-7] ***Anagyroidisoflavone B***
$C_{20}H_{16}O_6$ 352.343
Constit. of pods of *Laburnum anagyroides*. Powder.

3,4-Dihydro: [63807-90-9] ***Dihydroalpinumisoflavone.*** *Erythrivarone A*
$C_{20}H_{18}O_5$ 338.359
Constit. of *Crotalaria madurensis* and *Erythrina variegata*. Cryst. (MeOH). Mp 258-262°.

3,4-Dihydro,3ξ-hydroxy, 4′-Me ether: [923011-81-8] ***3,4-Dihydro-3-hydroxy-4′-O-methylalpinumisoflavone***
$C_{21}H_{20}O_6$ 368.385
Constit. of the roots of *Lotus polyphyllos*. Yellowish cryst. Mp 107-108°. λ_{max} 207; 267 (MeOH).

3,4-Dihydro, 4ξ-methoxy, 3ξ-hydroxy: [166197-32-6] ***Anagyroidisoflavone A***
$C_{21}H_{20}O_7$ 384.385
Constit. of pods of *Laburnum anagyroides*. Powder.

11-Hydroxy(1): [221150-19-2] ***Erysubin B***
$C_{20}H_{16}O_6$ 352.343
Constit. of *Erythrina suberosa* var. *glabrescens*. Pale yellow needles (EtOH). Mp 247-249°. $[\alpha]_D$-16 (c, 0.1 in MeOH). λ_{max} 203 (log ϵ 4.46); 226 (log ϵ 4.33); 283 (log ϵ 4.57) (MeOH).

11-Hydroxy(2): [215595-99-6] ***Hydroxyalpinumisoflavone***
$C_{20}H_{16}O_6$ 352.343
Constit. of *Genista ephedroides*. Amorph. yellow solid. $[\alpha]_D$ +39.9 (c, 0.16 in DMSO). Presumably the enantiomer of Erysubin B, but this needs confirmation. λ_{max} 283 (MeOH).

2′-Hydroxy, di-Me ether: [402939-13-3] ***Indicanin E***
$C_{22}H_{20}O_6$ 380.396
Constit. of the stem bark of *Erythrina indica*. Brown cryst. Mp 138-139°. λ_{max} 286 (log ϵ 4.62) (MeOH).

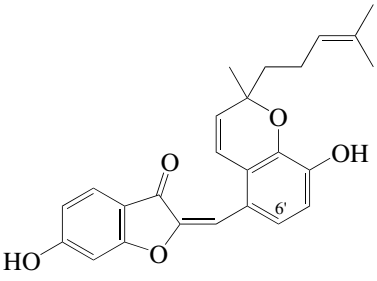
3′-Hydroxy, 4′-Me ether: [84395-23-3] *3′-Hydroxy-4′-*O*-methylalpinumisoflavone.* ***3′-Hydroxyalpinumisoflavone 4′-methyl ether***
$C_{21}H_{18}O_6$ 366.37
Constit. of seeds of *Millettia thonningii*. Yellow plates (C_6H_6). Mp 155-156°.

Jackson, B. *et al., JCS(C)*, 1971, 3389-3392 (*Laburnum alpinium constit, struct*)
Jain, A.C. *et al., JOC*, 1974, **39**, 2215-2217 (*synth, di-Ac*)
Vilain, C. *et al., Bull. Soc. R. Sci. Liege*, 1975, **44**, 306 (*4′-O-Methylalpinumisoflavone*)
Deshpande, V.H. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 205-207 (*Erythrina variegata constit*)
Chibber, S.S. *et al., Indian J. Chem., Sect. B*, 1979, **18**, 471-472 (*Alpiniumisoflavone*)
Olivares, E.M. *et al., Phytochemistry*, 1982, **21**, 1763-1765 (*3′-Hydroxy-4′-O-methylalpinumisoflavone*)
Da Rocha, A.I. *et al., CA*, 1983, **99**, 3038 (*4′-Dimethylallylalpinumisoflavone*)

Khalid, S.A. *et al., Phytochemistry*, 1983, **22**, 1001-1003 (*Millettia thonningi constits*)
Ingham, J.L. *et al., Prog. Chem. Org. Nat. Prod.*, 1983, **43**, 1-265 (*rev*)
Bhakuni, D.S. *et al., J. Nat. Prod.*, 1984, **47**, 585-591 (*Dihydroalpinumisoflavone*)
Tsukayama, M. *et al., Heterocycles*, 1992, **34**, 505-516 (*synth*)
Rao, E.V. *et al., Phytochemistry*, 1992, **31**, 1015-1017 (*deriv*)
Perrett, S. *et al., J. Ethnopharmacol.*, 1995, **47**, 49-54 (*Millettia thonningi constit, activity*)
Sato, H. *et al., Phytochemistry*, 1995, **39**, 673-676 (*Anagyroidisoflavones*)
Asomaning, W.A. *et al., Phytochemistry*, 1995, **39**, 1215-1218 (*Methylprenylalpinumisoflavone*)
Huang, K.F. *et al., J. Chin. Chem. Soc. (Taipei)*, 1996, **43**, 515-518 (*Erythrivarone A*)
Tanaka, H. *et al., Heterocycles*, 1998, **48**, 2661-2667 (*Erysubin B*)
Pistelli, L. *et al., J. Nat. Prod.*, 1998, **61**, 1404-1406 (*Hydroxyalpinumisoflavone*)
Asomaning, W.A. *et al., Phytochemistry*, 1999, **51**, 937-941 (*5-O-Methylalpinumisoflavone*)
Stewart, M. *et al., Fitoterapia*, 2000, **71**, 595-597 (*Rinorea welwitschii constit*)
Waffo, A.K. *et al., Phytochemistry*, 2000, **53**, 981-985 (*Indicanin C*)
Hou, A.-J. *et al., J. Nat. Prod.*, 2001, **64**, 65-70 (*Alpinumisoflavone, activity*)
Nkengfack, A.E. *et al., Phytochemistry*, 2001, **58**, 1113-1120 (*Indicanin E*)
Abdel-Kader, M.S. *et al., Nat. Prod. Res.*, 2006, **20**, 922-926 (*Dihydrohydroxy-O-methylalpinumisoflavone*)
Harrison, J.J.E.K. *et al., Acta Cryst. E*, 2008, **64**, o713 (*cryst struct*)
Akiyama, K. *et al., Phytochemistry*, 2010, **71**, 1865-1871 (*Lupinus albus constit, activity*)
Namkoong, S. *et al., Biol. Pharm. Bull.*, 2011, **34**, 203-208 (*Erythrina lysistemon constit, activity*)
Noccioli, C. *et al., Phytochem. Lett.*, 2011, **4**, 342-344 (*4′-glucoside*)

Altilisin H A-55

*6-Hydroxy-2-[[8-hydroxy-2-methyl-2-(4-methyl-3-penten-1-yl)-2*H*-1-benzopyran-5-yl]methylene]-3(2*H*)-benzofuranone, CAS* [1446467-90-8]



$C_{25}H_{24}O_5$ 404.462
Constit. of leaves of *Artocarpus altilis*. Potent inhibitor of α-glucosidase and moderate inhibitor of tyrosinase. Amorph. light yellow solid.

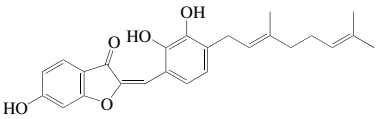
6′-Methoxy: [1446467-91-9] ***Altilisin I***
$C_{26}H_{26}O_6$ 434.488
Constit. of leaves of *Artocarpus altilis*. Potent inhibitor of α-glucosidase and moderate inhibitor of tyrosinase. Amorph. light yellow solid.

2Z-Isomer: ***Artocarpaurone***
$C_{25}H_{24}O_5$ 404.462
Constit. of the leaves of *Artocarpus altilis*. NO moderator. Yellow solid. $[\alpha]_D^{20}$ +5 (c, 0.25 in MeOH). λ_{max} 264 (log ϵ 3.88); 370 (log ϵ 4.14); 400 (log ϵ 4.21) (MeOH).

Huong, T.T. *et al., J. Asian Nat. Prod. Res.*, 2012, **14**, 923-928 (*Artocarpaurone*)
Mai, N.T.T. *et al., Phytochem. Lett.*, 2012, **5**, 647-650 (*Altilisins H,I*)

Altilisin J A-56

*2-[[4-[3,7-Dimethyl-2,6-octadien-1-yl]-2,3-dihydroxyphenyl]methylene]-6-hydroxy-3(2*H*)-benzofuranone, CAS. 4′-Geranyl-2′,3′,6-trihydroxyaurone* [1446467-92-0]



$C_{25}H_{26}O_5$ 406.477
Constit. of leaves of *Artocarpus altilis*. Potent inhibitor of α-glucosidase and moderate inhibitor of tyrosinase. Amorph. light yellow solid.

Mai, N.T.T. *et al., Phytochem. Lett.*, 2012, **5**, 647-650 (*Altilisin J*)

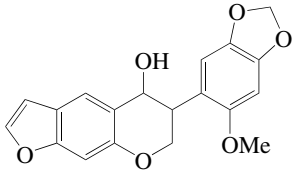
Amarbelin A-57

$C_{18}H_{16}O_7$ 344.32
Flavonoid. A 3′,4′-dihydroxy-3,x,y-trimethoxyflavone. Isol. from seeds of *Cuscuta reflexa*. Citron-yellow needles (EtOH aq.). Mp 234°.

Agarwal, R.R. *et al., J. Indian Chem. Soc.*, 1936, **13**, 531-536 (*Amarbelin, isol*)

Ambanol A-58

*6,7-Dihydro-6-(6-methoxy-1,3-benzodioxol-5-yl)-5*H*-furo[3,2-*g*][1]benzopyran-5-ol, CAS* [63838-66-4]

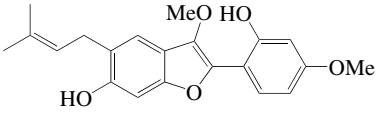


$C_{19}H_{16}O_6$ 340.332
Positive optical rotation but no data reported. Constit. of the root of *Neorautanenia amboensis*. Needles (Me_2CO/hexane). Mp 213-214°.

Oberholzer, M.E. *et al., Tet. Lett.*, 1977, **18**, 1165-1168 (*Neorautanenia constit, synth*)

Ambofuranol A-59

2-(2-Hydroxy-4-methoxyphenyl)-3-methoxy-5-(3-methyl-2-butenyl)-6-benzofuranol, 9CI. 6-Hydroxy-2-(2-hydroxy-4-methoxyphenyl)-3-methoxy-5-prenylbenzofuran [76869-00-6]

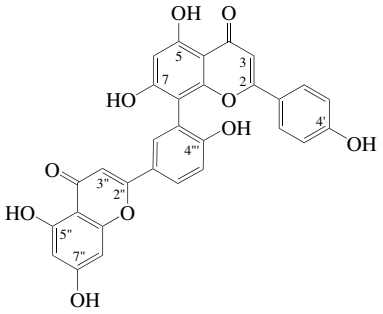


$C_{21}H_{22}O_5$ 354.402
Constit. of *Neorautanenia amboensis*. Needles (C_6H_6 or EtOH). Mp 147-148°.

Breytenbach, J.C. *et al., Tet. Lett.*, 1980, **21**, 4535-4538 (*Ambofuranol, struct*)

Amentoflavone A-60

4′,4‴,5,5″,7,7″-Hexahydroxy-3‴,8-biflavone, 8CI. 4′,5,7-Trihydroxyflavone-(3′ → 8)-4′,5,7-trihydroxyflavone. 3′,8-Bi[4′,5,7-trihydroxyflavone] [1617-53-4]



$C_{30}H_{18}O_{10}$ 538.466
Numbering of the rings in the names of derivs. does not always follow the scheme shown here. Constit. of *Metasequoia glyptostroboides*, *Viburnum prunifolium*, *Podocarpus gracilior*, *Garcinia kola*, *Garcinia livingstonei*, *Selaginella willdenowii*, *Rhus succedanea*, *Garcinia multiflora*, *Ginkgo biloba*, *Cupressocyparis leylandii*, *Cryptomeria japonica*, *Amentotaxus formosana*, *Psilotum triquetrum*, *Callitris*, *Cupressus*, *Juniperus* spp. and many others. Bradykinin antagonist. Shows anti-HIV activity. Inhibitor of human cathepsin B, phosphodiesterase and other enzymes. Shows antiinflammatory props and antiviral activity against a range of viral pathogens. Inhibitor of viral reverse transcriptases. Shows potent neuroprotective activity. Modulates intracellular reactive oxygen species. Human PPARγ agonist. Shows strong cytotoxicity against MCF-7 and HeLa cancer cell lines. Yellow cryst. (EtOH). Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 300°. $[\alpha]_D^{40}$ + 9. Log P 1.7 (calc). Opt. rotn. of derivs. is variable owing to atropisomerism. λ_{max} 270 (ϵ 41600); 338 (ϵ 38900) (EtOH) (Berdy).

*4′,4‴-Di-*O*-β-D-glucopyranoside:* [93078-97-8] *Amentoflavone 4′,4‴-diglucoside*
$C_{42}H_{38}O_{20}$ 862.75
Isol. from *Psilotum nudum*.

*4′,7″-Di-*O*-β-D-glucopyranoside:* [93078-98-9] *Amentoflavone 4‴,7-diglucoside*
$C_{42}H_{38}O_{20}$ 862.75
Isol. from *Psilotum nudum*.

*4′,4‴,7″-Tri-*O*-β-D-glucopyranoside:* [93078-96-7] *Amentoflavone 4′,4‴,7-triglucoside*
$C_{48}H_{48}O_{25}$ 1024.892
Isol. from *Psilotum nudum*.

Hexa-Ac: [17482-37-0]
Cryst. (EtOAc). Mp 234-235°.

4′-Me ether: [22136-74-9] ***Podocarpusflavone A***

$C_{31}H_{20}O_{10}$ 552.493
Constit. of leaves of *Podocarpus* spp. and also of *Dacrydium balansae*. Potent inhibitor of Dengue 2 NS5 polymerase. Pale yellow cryst. (MeOH/Py). Mp 322-324° dec.

4‴-Me ether: [521-32-4] ***Bilobetin***
$C_{31}H_{20}O_{10}$ 552.493
From *Ginkgo biloba*. Cryst. Mp 320° dec. Softens at 245-53°, resolidifies at 278°.

7-Me ether: [2608-21-1] ***Sotetsuflavone***
$C_{31}H_{20}O_{10}$ 552.493
Obt. from leaf of *Metasequoia glyptostroboides* and from *Cycasrevoluta*. Cryst. (Me_2CO aq.). Mp 324-325°.

7″-Me ether: [21763-71-3] ***Sequoiaflavone***
$C_{31}H_{20}O_{10}$ 552.493
Isol. from leaves of *Sequoia sempervirens* and *Cunninghamia lanceolata*. Mp 340-341° dec.

▶ DJ2984300

4′,4‴-Di-Me ether: [548-19-6] ***Isoginkgetin***
$C_{32}H_{22}O_{10}$ 566.52
From leaves of *Ginkgo biloba* and *Selaginella moellendorffii*. Bradykinin antagonist. C-AMP phosphodiesterase inhibitor. Shows selective cytotox. for human cancer cell lines. Yellow cryst. (Me_2CO). Mp 210° (effervesces and resolidifies) Mp 245° (double Mp). λ_{max} 213 (ϵ 90000); 271 (ϵ 42000); 330 (ϵ 36500) (EtOH) (Berdy). λ_{max} 280 (ϵ 53000); 376 (ϵ 24300) (EtOH/NaOH) (Berdy).

4′,4‴-Di-Me ether, 7″-O-β-D-glucopyranoside: [870298-08-1] ***Isoginkgetin 7-glucoside***
$C_{38}H_{32}O_{15}$ 728.662
Constit. of the leaves of *Ginkgo biloba*. Amorph. yellow powder. $[\alpha]_D^{20}$ +0.8 (c, 0.003 in MeOH). λ_{max} 271 (log ϵ 4.68); 328 (log ϵ 4.58) (MeOH).

4‴,7-Di-Me ether: [34394-13-3]
$C_{32}H_{22}O_{10}$ 566.52
From *Araucaria cunninghamii*.

4′,7-Di-Me ether: [34293-14-6]
$C_{32}H_{22}O_{10}$ 566.52
From *Metasequoia glyptostroboides*. Cryst. (H_2O). Mp 318-320°.

4′,7″-Di-Me ether: [23624-21-7] ***Podocarpusflavone B***. *Putraflavone*
$C_{32}H_{22}O_{10}$ 566.52
Constit. of *Podocarpus* spp. Pale yellow cryst. (MeOH/Py). Mp 286° dec.

4‴,7″-Di-Me ether: [481-46-9] ***Ginkgetin***
$C_{32}H_{22}O_{10}$ 566.52
From *Araucaria cunninghamii*, *Metasequoia glyptostroboides*, *Cephalotaxus drupaceae*, *Taxus cuspidata*, *Ginkgo biloba* and *Selaginella moellendorffii*. Shows CAMP-phosphodiesterase inhibitory activity. Inhibitor of influenza virus sialidase. Shows selective cytotox. against human cancer cell lines. Yellow plates (Me_2CO). Mp 336° Mp 350°.

4‴,7″-Di-Me ether, 7-O-β-D-glucopyranoside: [870298-07-0] ***Ginkgetin 7″-glucoside***
$C_{38}H_{32}O_{15}$ 728.662
Constit. of the leaves of *Ginkgo biloba*. Amorph. yellow powder. $[\alpha]_D^{20}$ +5.5 (c, 0.004 in MeOH). λ_{max} 270 (log ϵ 4.53); 330 (log ϵ 3.49) (MeOH).

7,7″-Di-Me ether: [67882-11-5] ***7,7″-Di-O-methylamentoflavone***
$C_{32}H_{22}O_{10}$ 566.52
Constit. of *Araucaria excelsa*, *Cunninghamia* sp., *Cupressus* sp. and *Podocarpus* sp. and also of *Decussocarpus rospigliosi*. Potent and selective inhibitor of PDE 4.

4′,4‴,7-Tri-Me ether: [481-45-8] ***Kayaflavone***
$C_{33}H_{24}O_{10}$ 580.547
Constit. of *Torreya nucifera*, *Cryptomeria japonica*, *Podocarpus saligna* and *Podocarpus macrophylla*. Pale yellow needles (Me_2CO). Mp 335° (314-315°) dec.

4′,4‴,7″-Tri-Me ether: [521-34-6] ***Sciadopitysin***
$C_{33}H_{24}O_{10}$ 580.547
Constit. of *Sciadopitys verticillata*, *Torreya nucifera*, *Metasequoia glyptostroboides*, *Juniperus horizontalis*, *Taxus cuspidata* and *Podocarpus macrophylla*. Shows weak antifungal activity. Cryst. (Me_2CO). Mp 287-289° Mp 295-297° dec. λ_{max} 271 (ϵ 37600); 330 (ϵ 35000) (EtOH) (Berdy). λ_{max} 287 (ϵ 50800); 378 (ϵ 16000) (EtOH/NaOH) (Berdy).

4′,7,7″-Tri-Me ether: [23132-13-0] ***Heveaflavone***
$C_{33}H_{24}O_{10}$ 580.547
From leaves of the rubber tree *Hevea brasiliensis*. Yellow rods (Me_2CO). Mp 300°.

4‴,7,7″-Tri-Me ether: [67882-13-7] ***4‴,7,7″-Tri-O-methylamentoflavone***
$C_{33}H_{24}O_{10}$ 580.547
Constit. of *Araucaria excelsa*, *Taxus baccata* and *Thuja* spp. Yellow solid. Mp 300°. $[\alpha]_D$ +4.7 (c, 0.1 in Py).

4′,4‴,7,7″-Tetra-Me ether: [22783-08-0]
$C_{34}H_{26}O_{10}$ 594.573
Constit. of *Dacrydium cupressinum* ((±)-form) and *Araucaria cookii* ((+)-form). Yellow prisms (2-propanol/CH_2Cl_2). Mp 273° Mp 292-294° (racemate). $[\alpha]_D^{34}$ +41 (EtOH/Py). λ_{max} 270 (ϵ 44300); 328 (ϵ 39600) (EtOH).

4′,4‴,5,7,7″-Penta-Me ether: [107392-32-5] ***Oliveriflavone***
$C_{35}H_{28}O_{10}$ 608.6
Isol. from the leaves of *Cephalotaxus oliveri*.

Hexa-Me ether: [3778-26-5] *Hexa*-O-*methylamentoflavone*. ***Dioonflavone***. *Ginkgetin tetra-Me ether*
$C_{36}H_{30}O_{10}$ 622.627
Isol. from *Araucaria* spp., *Dioon* sp. and *Podocarpus taxifolia*. Cryst. (EtOH). Mp 246°.

2,3-Dihydro: [106577-42-8] ***2″,3″-Dihydroamentoflavone***
$C_{30}H_{20}O_{10}$ 540.482
Constit. of *Schinus terebinthifolius*. Has (*S*)-config.

2,3-Dihydro, 4′,7-di-Me ether: [34293-17-9] ***2″,3″-Dihydro-4‴,7″-di-O-methylamentoflavone***
$C_{32}H_{24}O_{10}$ 568.536
Constit. of *Metasequoia glyptostroboides*. Cryst. (Me_2CO aq.). Mp 295-297° dec.

2,3-Dihydro, 3-hydroxy: [879004-77-0] ***2″,3″-Dihydro-3″-hydroxyamentoflavone***
$C_{30}H_{20}O_{11}$ 556.481
Constit. of the fruit of *Aristolochia contorta*. Racemate with (2*RS*,3*RS*)-(*trans*)-config.

2″,3″-Dihydro: [34340-51-7] ***2,3-Dihydroamentoflavone***
$C_{30}H_{20}O_{10}$ 540.482
From *Cryptomeria japonica* and *Cycas* spp. Cathepsins B,K inhibitor. BACE-1 inhibitor. Potential anti-Alzheimer's lead. Cryst. (EtOH). Mp 300° .

2″,3″-Dihydro(S-), 4′-Me ether: [852875-96-8] ***2,3-Dihydro-4‴-O-methylamentoflavone***
$C_{31}H_{22}O_{10}$ 554.509
Constit. of the cones of *Cycas beddomei*. Yellow cryst. (MeOH). Mp 231-232° dec. $[\alpha]_D^{25}$-0.5 (c, 1.3 in MeOH). λ_{max} 225 (log ϵ 4.2); 289 (log ϵ 4.16); 334 (log ϵ 4.06) (MeOH).

2″,3″-Dihydro(S-), 4‴-Me ether: [1126431-68-2] *2,3-Dihydro-4′-O-methylamentoflavone*. ***2,3-Dihydrobilobetin***
$C_{31}H_{22}O_{10}$ 554.509
Constit. of *Cycas circinalis* and *Selaginella uncinata*. Exhibits protective effect against anoxia. Yellow powder. $[\alpha]_D^{25}$ +11.2 (c, 0.3 in MeOH). $[\alpha]_D^{27}$ + 3.12 (c, 1.0 in DMSO). λ_{max} 289; 330 (MeOH). λ_{max} 288 (log ϵ 4.92); 327 (4.79) (MeOH).

2″,3″-Dihydro(S-), 7″-Me ether: [126794-76-1] ***2,3-Dihydro-7-O-methylamentoflavone***
$C_{31}H_{22}O_{10}$ 554.509
Isol. from *Libocedrus bidwillii* and *Libocedrus plumosa*.

2″,3″-Dihydro(S-), 4′,4‴-di-Me ether: [828923-27-9] ***2,3-Dihydro-4′,4‴-di-O-methylamentoflavone***
$C_{32}H_{24}O_{10}$ 568.536
Constit. of *Podocarpus macrophyllus* var. *macrophyllus*. Inhibitor of tyrosinase. Pale yellow powder. $[\alpha]_D^{25}$-10 (c, 0.1 in MeOH). λ_{max} 280 (ϵ 89120); 322 (ϵ 50120) (EtOH).

2″,3″-Dihydro(S-), 4‴,7″-di-Me ether: [873999-88-3] ***2,3-Dihydro-4′,7-di-O-methylamentoflavone***
$C_{32}H_{24}O_{10}$ 568.536
Constit. of *Selaginella delicatula*. Yellowish powder (MeOH). Mp > 300°. $[\alpha]_D^{25}$ +4.9 (c, 0.1 in DMSO). λ_{max} 221 (log ϵ 4.35); 283 (log ϵ 4.07); 337 (sh) (log ϵ 3.8) (MeOH).

2″,3″-Dihydro(S-), 4‴,7,7″-tri-Me ether: [873999-86-1] ***2,3-Dihydro-4′,7,7″-tri-O-methylamentoflavone***
$C_{33}H_{26}O_{10}$ 582.562

Constit. of *Selaginella delicatula*. Yellowish powder (MeOH). Mp 288-290° dec. $[\alpha]_D^{25}$ +4.5 (c, 0.15 in DMSO). λ_{max} 220 (log ϵ 4.37); 282 (log ϵ 4.09); 334 (sh) (log ϵ 3.85) (MeOH).

2″,3″-Dihydro, 7,7″-di-Me ether: [111897-14-4] ***2,3-Dihydro-7,7″-di-O-methylamentoflavone***
$C_{32}H_{24}O_{10}$ 568.536
Constit. of *Amentotaxus yunnanensis*, *Thuja gigantea* and *Thuja javanica*. Yellow powder. Mp > 290°. $[\alpha]_D^{24}$ +5.1 (c, 0.29 in Py). λ_{max} 221; 284 (H_2O).

2″,3″-Dihydro, 4′,4‴,7″-tri-Me ether: [34421-19-7] ***2,3-Dihydrosciadopitysin***
$C_{33}H_{26}O_{10}$ 582.562
Constit. of the autumn leaves of *Metasequoia glyptostroboides*. Cryst. (MeOH). Mp 150-152°.

*2,2″,3,3″-Tetrahydro(*S,S-*):* [48236-96-0] *4′,4‴,5,5″,7,7″-Hexahydroxy-3‴,8-biflavanone.* ***Tetrahydroamentoflavone.*** *3′,8″-Binaringenin*
$C_{30}H_{22}O_{10}$ 542.498
Constit. of *Semecarpus prainii* and others. Powder. Mp 234-238°. $[\alpha]_D^{23}$-19 (c, 0.68 in MeOH).

*2,2″,3,3″-Tetrahydro(*S,S-*), 4‴-Me ether:* [1126431-70-6] ***Tetrahydrobilobetin***
$C_{31}H_{24}O_{10}$ 556.525
Constit. of *Cycas circinalis* and *Selaginella uncinata*. Yellowish powder. $[\alpha]_D^{25}$-2 (c, 0.15 in MeOH). λ_{max} 291; 332 (MeOH).

*2,2″,3,3″-Tetrahydro(*S,S-*), 4′,4‴-di-Me ether:* [1310349-31-5] ***Tetrahydroisoginkgetin***
$C_{32}H_{26}O_{10}$ 570.551
Constit. of the leaflets of *Cycas circinalis*. Yellowish powder. $[\alpha]_D^{25}$-28 (c, 0.2 in MeOH). λ_{max} 290; 330 (MeOH).

2,2″,3,3″-Tetrahydro, 7-Me ether: [99339-73-8]
$C_{31}H_{24}O_{10}$ 556.525
Constit. of *Ochna pumila*. Cryst. (MeOH). Mp 154°.

2,2″,3,3″-Tetrahydro, 7,7″-di-Me ether: [381866-52-0]
$C_{32}H_{26}O_{10}$ 570.551
Constit. of *Rhus retinorrhoea*. Amorph. yellow powder. $[\alpha]_D$-25.4 (c, 0.02 in DMSO). Has (2*S*,2″*S*)-config. λ_{max} 287 (log ϵ 4.68); 330 (log ϵ 3.2) (MeOH).

2,2″,3,3″-Tetrahydro, 4′,7,7″-tri-Me ether: [110382-42-8] ***Podocarpusflavanone***
$C_{33}H_{28}O_{10}$ 584.578
Constit. of *Podocarpus taxifolia*. Light brown powder (MeOH). Mp 236-238°. Has (*S*)-config.

3′-Hydroxy: [86682-62-4] ***3‴-Hydroxyamentoflavone***
$C_{30}H_{18}O_{11}$ 554.466
Constit. of *Cryptomeria japonica*. Cryst. (EtOH). Mp 298-300°.

3′-Hydroxy, 4′,4‴, 7″-tri-Me ether: [1110706-49-4] *3‴-Hydroxysciadopitysin.* ***Taxusbiflavone A***
$C_{33}H_{24}O_{11}$ 596.546
Constit. of *Taxus cuspidata*. Amorph. yellow solid.

5‴-Hydroxy: [114865-39-3] ***5′-Hydroxyamentoflavone***
$C_{30}H_{18}O_{11}$ 554.466
Constit. of *Plagiomnium elatum*.

*5‴-Hydroxy, 2″,3″-dihydro(*S-*):* [122475-58-5] ***2,3-Dihydro-5′-hydroxyamentoflavone***
$C_{30}H_{20}O_{11}$ 556.481
Isol. from *Plagiomnium cuspidatum*.

6-Hydroxy, 2″,3″-dihydro: [1338576-72-9] ***2,3-Dihydro-6″-hydroxyamentoflavone***
$C_{30}H_{20}O_{11}$ 556.481
Constit. of the leaves and roots of *Selaginella moellendorfi*. Yellow oil. $[\alpha]_D^{20}$ +37 (c, 0.1 in MeOH). λ_{max} 208 (log ϵ 4.31); 225 (log ϵ 3.23); 278 (log ϵ 4.42); 330 (log ϵ 3.94) (MeOH).

*3′,5‴-Dihydroxy, 2″,3″-dihydro(*S-*):* [122475-59-6] ***2,3-Dihydro-3‴,5′-dihydroxyamentoflavone***
$C_{30}H_{20}O_{12}$ 572.481
Isol. from *Plagiomnium cuspidatum* and *Philonotis fontana*.

5,5″-Dideoxy, 3′,5′-dihydroxy: [92051-85-9] *3′,4′,4‴,5′,7,7″-Hexahydroxy-3‴,8-biflavone*
$C_{30}H_{18}O_{10}$ 538.466
Isol. from *Blepharocarya* sp.

3‴-Methoxy: [1375799-58-8] ***3‴-Methoxyamentoflavone***
$C_{31}H_{20}O_{11}$ 568.492
Constit. of stems and leaves of *Lonicera macranthoides*. Amorph. yellow powder. Called 3′-methoxy in the lit.

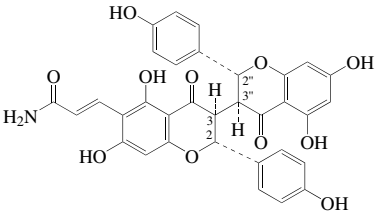
5‴-Methoxy, 4‴-Me ether: [77053-35-1] ***5′-Methoxybilobetin***
$C_{32}H_{22}O_{11}$ 582.519
Isol. from *Ginkgo biloba*. Yellow cryst. (EtOH aq.). Mp 251°.

Nakazawa, K. *et al., Chem. Pharm. Bull.*, 1962, **10**, 1032-1038 (*Ginkgetin ethers, synth*)
Baker, W. *et al., JCS*, 1963, 1477-1490 (*Bilobetin, Isobilobetin, Ginkgetin, Sciadopitysin, Kayaflavone*)
Batterham, R. *et al., Aust. J. Chem.*, 1964, **17**, 428-439 (*pmr*)
Hodges, R. *et al., Aust. J. Chem.*, 1965, **18**, 1491-1492 (*4′,4‴,7,7″-tetra-Me ether*)
Hörhammer, L. *et al., Naturwissenschaften*, 1965, **52**, 161 (*Amentoflavone*)
Miura, H. *et al., Tet. Lett.*, 1968, **9**, 2339-2342 (*Podocarpusflavones A,B, struct*)
Miura, H. *et al., Chem. Pharm. Bull.*, 1969, **17**, 150-154 (*Podocarpusflavones*)
Pelter, A. *et al., Experientia*, 1969, **25**, 350-351 (*Araucaria cookii constit*)
Madhav, R. *et al., Tet. Lett.*, 1969, **10**, 2017-2019 (*Heveaflavone*)
Beckmann, S. *et al., Phytochemistry*, 1971, **10**, 2465-2474 (*Metasequoia glypostroboides constits*)
Garg, H.S. *et al., Phytochemistry*, 1971, **10**, 2787-2791 (*Putraflavone*)
Chari, V.M. *et al., Phytochemistry*, 1977, **16**, 1273-1278 (*Amentoflavone, cmr*)
Ilyas, N. *et al., Phytochemistry*, 1978, **17**, 987-990 (*Araucaria excelsa constits*)
Joly, M. *et al., Phytochemistry*, 1980, **19**, 1999-2002 (*5′-Methoxybilobetin*)
Ahmad, I. *et al., Phytochemistry*, 1981, **20**, 1169-1170 (*Tetrahydroamentoflavone*)
Ohmoto, T. *et al., Chem. Pharm. Bull.*, 1983, **31**, 919-924 (*Cryptomeria japonica constits*)
Fatma, W. *et al., J. Chem. Res., Synop.*, 1984, 298 (*synth*)
Markham, K.R. *et al., Phytochemistry*, 1984, **23**, 2053-2056 (*Psilotum nudum constits*)
Ma, Z. *et al., Zhiwu Xuebao (Acta Bot. Sin.)*, 1986, **28**, 641 (*Oliveriflavone*)
Kamil, M. *et al., Phytochemistry*, 1987, **26**, 1171-1173 (*Ochna pumila constiyt*)
Roy, S.K. *et al., Phytochemistry*, 1987, **26**, 1985-1987 (*Podocarpusflavanone*)
Markham, K.R. *et al., Phytochemistry*, 1987, **26**, 3335-3337 (*Amentoflavone, mono, di, tetra-Me ethers, 2,3-dihydro, cmr*)
Geiger, H. *et al., Z. Naturforsch., C*, 1988, **43**, 1-4 (*Plagiomnium elatum constits, struct*)
Spedding, G. *et al., Antiviral Res.*, 1989, **12**, 99-107 (*Amentoflavone, viral RT inhibitor*)
Geiger, H. *et al., Z. Naturforsch., C*, 1989, **44**, 189-192 (*Plagiomnium cuspidatum constits, struct*)
Markham, K.R. *et al., Phytochemistry*, 1990, **29**, 501-507 (*2,3-Dihydro-7″-methylamentoflavone, occur, struct*)
Parmar, V.S. *et al., Indian J. Chem., Sect. B*, 1993, **32**, 601 (*4‴,7,7″-tri-Me ether*)
Geiger, H. *et al., Z. Naturforsch., C*, 1993, **48**, 821 (*Amentoflavone, pmr, cmr*)
Konda, Y. *et al., J. Het. Chem.*, 1995, **32**, 1531-1535 (*Ginkgetin, Sciadopitysin, cryst struct, pmr, cmr*)
Reddy, B.P. *et al., Indian J. Chem., Sect. B*, 1996, **35**, 283 (*Ginkgetin, Sciadopitysin*)
Muranaka, T. *et al., CA*, 1999, **130**, 322915n
Terashima, K. *et al., Heterocycles*, 1999, **50**, 283-290 (*Garcinia kola constits*)
Lin, Y.-M. *et al., Planta Med.*, 1999, **65**, 120-125 (*Amentoflavone, antiviral activity*)
Krauze-Baranowska, M. *et al., Planta Med.*, 1999, **65**, 482-484 (*2,3-Dihydrosciadopitysin*)
Ahmed, M.S. *et al., Phytochemistry*, 2001, **58**, 599-602 (*tetrahydro 7,7″-di-Me ether*)
Hanrahan, J.R. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 2281-2284 (*synth*)
Li, S.-H. *et al., J. Nat. Prod.*, 2003, **66**, 1002-1005 (*2,3-Dihydro-7,7″-di-O-methylamentoflavone*)
Kang, D.G. *et al., Planta Med.*, 2004, **70**, 718-722 (*Amentoflavone, vasorelaxant activity*)
Pan, X. *et al., Bioorg. Med. Chem.*, 2005, **13**, 5819-5825 (*Amentoflavone, cathepsin B inhibitor*)
Kang, S.S. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 3588-3591 (*Amentoflavone, neuroprotective activity*)
Das, B. *et al., Chem. Pharm. Bull.*, 2005, **53**, 135-136 (*2,3-Dihydro-4‴-O-*methylamentoflavone)
Hyun, S.K. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1200-1201 (*Ginkgetin 7″-glucoside, Isoginkgetin 7-glucoside*)
Hansen, R.S. *et al., Eur. J. Pharmacol.*, 2005, **519**, 199-207 (*Amentoflavone, GABA receptor subtype binding*)
Yu, L.-L. *et al., Pharmazie*, 2005, **60**, 789-791 (*2″,3″-Dihydro-3″-hydroxyamentoflavone*)
Chen, J.-J. *et al., Planta Med.*, 2005, **71**, 659-665 (*Selaginella delicatula constits*)
Krauze-Baranowska, M. *et al., Z. Naturforsch., C*, 2005, **60**, 679-685 (*Isoginkgetin, Ginkgetin, Podocarpusflavone B*)
Bauri, A.K. *et al., Acta Cryst. E*, 2006, **62**, 2321-2323 (*hexa-Me, cryst struct*)
Zeng, G.-Z. *et al., Eur. J. Med. Chem. (Chim. Ther.)*, 2006, **41**, 1247-1252 (*2″,3″-dihydro, Cathepsins B,K inhibitor*)
Wang, Y. *et al., Asian J. Trad. Med.*, 2007, **2**, 240-243 (*Taxusbiflavone A*)
Na, M. *et al., Biol. Pharm. Bull.*, 2007, **30**, 379-381 (*Amentoflavone, PTP 1B inhibitor*)
Miki, K. *et al., Bioorg. Med. Chem. Lett.*, 2007, **17**, 772-775 (*Ginkgetin, activity*)
Cheng, K.-T. *et al., Chem. Pharm. Bull.*, 2007, **55**, 757-761 (*2,3-Dihydro-4′,4‴-di-O-methylamentoflavone*)
Chaabi, M. *et al., Planta Med.*, 2007, **73**, 1284-1286 (*7,7″-di-Me ether, PDE4 inhibitor*)

Lee, C.W. *et al., Bioorg. Med. Chem.*, 2008, **16**, 732-738 (*Amentoflavone, inhibn of human MMP-1 expression*)
Demirkiran, O. *et al., Phytochemistry*, 2009, **70**, 244-249 (*Amentoflavone, intracellular ROS prodn modulator*)
Ryn, Y.B. *et al., Bioorg. Med. Chem.*, 2010, **18**, 7940-7947 (*Amentoflavone, SARS-CoV 3CL inhibitor*)
Sasaki, H. *et al., Bioorg. Med. Chem. Lett.*, 2010, **20**, 4558-4560 (*2″,3″-dihydro, BACE-1 inhibitor*)
Cao, Y. *et al., Fitoterapia*, 2010, **81**, 253-258 (*Selaginella moellendorffii, selective cytotox*)
Moawad, A. *et al., Planta Med.*, 2010, **76**, 796-802 (*Cycas circinalis constits*)
Wu, B. *et al., Chem. Biodiversity*, 2011, **8**, 1735-1747 (*2,3-Dihydro-6″-hydroxyamentoflavone*)
Zheng, J.-X. *et al., Molecules*, 2011, **16**, 6206-6214 (*2,3-Dihydrobilobetin, activity*)
Lee, J.Y. *et al., Bull. Korean Chem. Soc.*, 2012, **33**, 1475-1479 (*Amentoflavone, PPAR agonist activity*)
Lee, E. *et al., Bull. Korean Chem. Soc.*, 2012, **33**, 2219-2223 (*Amentoflavone, cytotox*)
Lee, E. *et al., Bull. Korean Chem. Soc.*, 2012, **33**, 2878-2882 (*Amentoflavone, antiinflammatory activity*)
Sun, M. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2012, **48**, 231-233 (*3‴-Methoxyamentoflavone*)
Ferchichi, L. *et al., Phytochemistry*, 2012, **78**, 98-106 (*Amentoflavone, AGE formation activity*)
Coulerie, P. *et al., Planta Med.*, 2012, **78**, 672-677 (*Podocarpusflavone A, DV-NS5 polymerase inhibitor*)

6-[2-(Aminocarbonyl)ethenyl]-4′,4‴,5,5″,7,7″-hexahydroxy-3,3″-biflavanone A-61

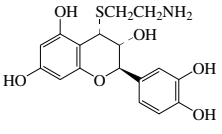
6-Acrylamido-4′,5,7-trihydroxyflavanone-(3→3)-4′,5,7-trihydroxyflavanone.
6-(Aminoacryloyl)chamaejasmin



$C_{33}H_{25}NO_{11}$ 611.561

(2*R,2″*R**,3*S**,3″*S**)-*form*** [1384969-43-0]
Constit. of root of *Ormocarpum kirkii*.
Xu, Y.-J. *et al., Phytochemistry*, 2012, **79**, 121-128 (*Ormocarpum kirkii constit*)

4-(2-Aminoethylthio)-3,3′,4′,5,7-pentahydroxyflavan A-62



(2*R*,3*R*,4*S*)-*form*

$C_{17}H_{19}NO_6S$ 365.406

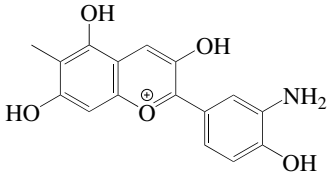
(2*R*,3*R*,4*S*)-*form* [374078-02-1]
4β-(2-Aminoethylthio)catechin.
Constit. of *Vitis vinifera*.

(2*R*,3*S*,4*S*)-*form* [374078-00-9]
4β-(2-Aminoethylthio)epicatechin.
Constit. of *Vitis vinifera*.

3-O-(3,4,5-Trihydroxybenzoyl): [374078-01-0]
$C_{24}H_{23}NO_{10}S$ 517.512
Constit. of *Vitis vinifera*.
Torres, J.L. *et al., J. Agric. Food Chem.*, 2001, **49**, 4627-4634 (*Vitis vinifera constits*)

3′-Amino-3,4′,5,7-tetrahydroxy-6-methylflavylium(1+) A-63

2-(3-Amino-4-hydroxyphenyl)-3,5,7-trihydroxy-6-methylbenzopyrylium(1+),CAS

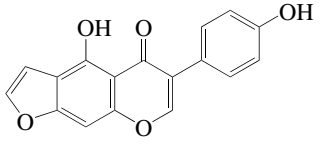


$C_{16}H_{14}NO_5^{\oplus}$ 300.290

N-*(1-Propenyl):* [1345836-92-1] *3,4′,5,7-Tetrahydroxy-6-methyl-3′-(1-propenylamino)flavylium(1+)*
$C_{19}H_{18}NO_5^{\oplus}$ 340.355
Constit. of the leaves of *Bryophyllum pinnatum*. Exhibits antibacterial and antifungal activities. Dark green solid. Counterion not specified.
Okwu, D.E. *et al., J. Chem. Pharm. Res.*, 2011, **3**, 1-10 (*Bryophyllum pinnatum constit*)

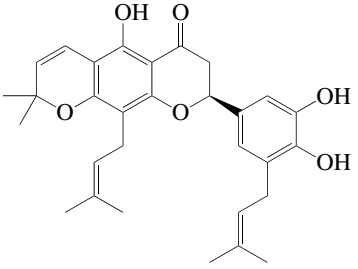
Ammopiptanin B A-64

4-Hydroxy-6-(4-hydroxyphenyl)-5H-furo[3,2-g][1]benzopyran-5-one
[1052114-74-5]



$C_{17}H_{10}O_5$ 294.263
Constit. of *Ammopiptanthus mongolica*. Yellowish powder. Mp 133-135°. λ_{max} 204 (log ϵ 3.31); 265 (log ϵ 2.57); 349 (log ϵ 0.31) (MeOH).
Tian, X.-M. *et al., Helv. Chim. Acta*, 2008, **91**, 1015-1022 (*isol, struct*)

Amoridin A-65

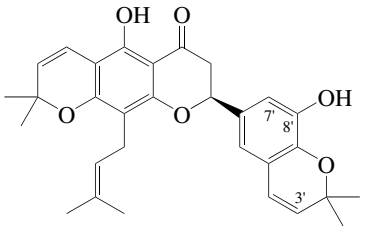


$C_{30}H_{34}O_6$ 490.595

(*S*)-*form* [119347-05-6]
Constit. of the root bark of *Amorpha fruticosa*.
3′-Me ether: [119347-01-2] ***Amoricin***
$C_{31}H_{36}O_6$ 504.622
Constit. of the root bark of *Amorpha fruticosa*.
Rozsa, Z. *et al., Fitoterapia*, 1988, **59**, 215-218 (*Amoridin, Amoricin*)

Amorin A-66

7,8-Dihydro-5-hydroxy-8-(8-hydroxy-2,2-dimethyl-2H-1-benzopyran-6-yl)-2,2-dimethyl-10-(3-methyl-2-butenyl)-2H,6H-benzo[1,2-b:5,4-b′]dipyran-6-one



(*S*)-*form*

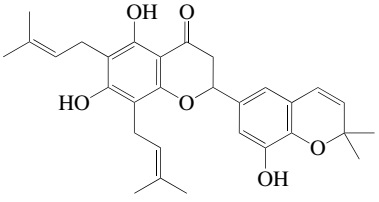
$C_{30}H_{32}O_6$ 488.579

(*S*)-*form* [119347-09-0]
Constit. of the root bark of *Amorpha fruticosa*.

(ξ)-*form*
8′-Deoxy: [150998-92-8] ***Euchrenone a$_{14}$***
$C_{30}H_{32}O_5$ 472.580
Constit. of *Euchresta tubulosa*. Yellow oil.
8′-Deoxy, 7′-hydroxy: [137319-40-5] ***Euchrenone a$_{11}$***
$C_{30}H_{32}O_6$ 488.579
Isol. from *Euchresta formosana*. Pale yellow oil.
8′-Deoxy, 3′,4′-dihydro, 3ξ,7′-dihydroxy: [72782-82-2] ***Flemichin E***
$C_{30}H_{34}O_7$ 506.594
Constit. of *Flemingia wallichii*. Brown-yellow prisms (EtOAc/hexane). Mp 115°. $[\alpha]_D$-105.3 (c, 0.29 in MeOH).
Babu, S.S. *et al., Indian J. Chem., Sect. B*, 1979, **18**, 388-389 (*Flemichin E*)
Rozsa, Z. *et al., Fitoterapia*, 1988, **59**, 215-218 (*Amorin*)
Mizuno, M. *et al., Phytochemistry*, 1991, **30**, 3095-3097 (*Euchrenone a$_{11}$*)
Matsuura, N. *et al., Phytochemistry*, 1993, **33**, 701-705 (*Euchrenone a$_{14}$*)
Ohyama, M. *et al., Phytochemistry*, 1998, **48**, 907-910 (*Amorin*)

Amorinin A-67

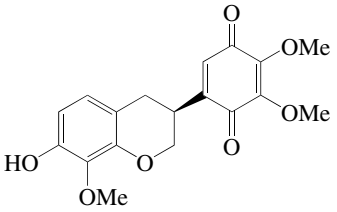
[83677-05-8]



$C_{30}H_{34}O_6$ 490.595
Constit. of *Amorpha fruticosa*. Oil.

Rózsa, Zs. *et al., Phytochemistry*, 1982, **21**, 1827-1828 (*Amorinin, struct*)

Amorphaquinone **A-68**
*5-(3,4-Dihydro-7-hydroxy-8-methoxy-2*H*-1-benzopyran-3-yl)-2,3-dimethoxy-2,5-cyclohexadiene-1,4-dione, 9CI*

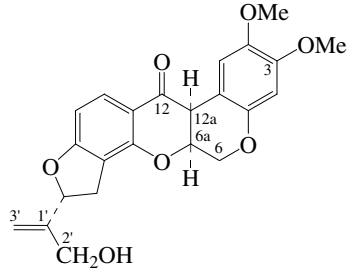


$C_{18}H_{18}O_7$ 346.336
Related to Pendulone in C-142.

(S)-*form* [70283-29-3]
Constit. of *Abrus schimperi*, *Amorpha fruticosa* and *Eysenhardtia adenostylis*. Exhibits antibacterial, antileishmanial and antifungal activity. Amorph. reddish solid. $[\alpha]_D$-92.9 (solvent not reported). $[\alpha]_D^{25}$-22 (c, 0.5 in MeOH). λ_{max} 205 (log ϵ 2.32); 270 (log ϵ 0.91) (MeOH).

Shibata, H. *et al., Heterocycles*, 1978, **10**, 85-86 (*Amorphaquinone*)
Ohyama, M. *et al., Phytochemistry*, 1998, **48**, 907-909 (*Amorphaquinone, struct*)
Eur. Pat., 2006, 1 721 524 (*activity*)
Rahman, A.A. *et al., Nat. Prod. Commun.*, 2011, **6**, 1645-1650 (*cd, abs config, activity*)

Amorphigenin **A-69**
*1,2,12,12*a*-Tetrahydro-2-[1-(hydroxymethyl)ethenyl]-8,9-dimethoxy[1]benzopyrano[3,4-*b*]furo[2,3-*h*][1]benzopyran-6(6a*H*)-one, 9CI. 8′-Hydroxyrotenone*
[4208-09-7]



$C_{23}H_{22}O_7$ 410.423
Various numbering schemes have been used for the side-chain (here numbered 1′, 2′, 3′). Constit. of *Amorpha fruticosa*, *Berchemia discolor* and *Dalbergia monetaria*. Shows cytotoxic props. against human breast carcinoma MCF-7, lung carcinoma Lu1 and prostate carcinoma LNCaP cells. Cryst. (C_6H_6/$CHCl_3$, EtOH/$CHCl_3$, Me_2CO aq. or MeOH). Sol. MeOH, Me_2CO; poorly sol. H_2O. Mp 196-197°. $[\alpha]_D^{20}$-125.6 (c, 2.04 in $CHCl_3$). λ_{max} 236 (ϵ 13900); 293 (ϵ 16900) (MeOH) (Berdy).
▶ LD_{50} (mus, orl) 2.6 mg/kg. VL1575000

O-*β-D-Glucopyranoside:*
$C_{29}H_{32}O_{12}$ 572.565
Constit. of seeds of *Amorpha* spp. and *Dalbergia monetaria*. Mp 164°. $[\alpha]_D^{20}$-122 (c, 0.1 in EtOH).

O-*[α-L-Arabinopyranosyl-(1→6)-β-D-glucopyranoside]:* [4207-90-3] ***Amorphin***. *Amorphigenin* O-*vicianoside. Fruticin. Frutitsin. Amocard*
$C_{34}H_{40}O_{16}$ 704.68
Glycoside from seeds of *Amorpha fruticosa*. Shows sedative props. Needles (MeOH aq. or MeOH). Mp 154-155°. $[\alpha]_D^{18.5}$-123.6 (c, 1.1 in MeOH). $[\alpha]_D^{24.5}$-87.9 (c, 2.55 in Py). The identity of Fruticin with Amorphin is not totally clear from the ref. quoted but appears to be the case.

3-O-*De-Me:* [98619-30-8] ***3-O-Demethylamorphigenin***
$C_{22}H_{20}O_7$ 396.396
Constit. of fruit of *Amorpha fruticosa*. Cryst. Mp 224-227°. $[\alpha]_D^{20}$-181.4 (c, 0.2 in Py).

12α-Alcohol: [226998-47-6] *12-Dihydroamorphigenin. Dalcochinin*
$C_{23}H_{24}O_7$ 412.438
Needles (EtOAc/MeOH). Mp 171-172°. λ_{max} 285 (MeOH).

*12α-Alcohol, 2′-*O*-β-D-glucopyranoside:* [226981-47-1] ***Dalcochinin 2′-O-β-D-glucoside***
$C_{29}H_{34}O_{12}$ 574.58
Constit. of *Dalbergia cochinchinensis*. Cryst. (MeOH). Mp 121-123°. λ_{max} 285 (ϵ 4000) (MeOH).

1′,3′-Dihydro: [38510-58-6] ***Dihydroamorphigenin***. *22,23-Dihydro-24-hydroxyrotenone*
$C_{23}H_{24}O_7$ 412.438
Constit. of seeds of *Amorpha fruticosa*. Mp 189-190°.

1′,3′-Dihydro, 1′-hydroxy: [29360-12-1] ***Amorphigenol***
$C_{23}H_{24}O_8$ 428.438
Constit. of *Amorpha* spp. Needles (EtOH aq.). Mp 195-196° (187-189°). $[\alpha]_D^{20}$-124 (c, 0.47 in EtOH).

*1′,3′-Dihydro, 1′-hydroxy, 1′-*O*-β-D-glucopyranoside:* [29360-13-2] ***Amorphigenol glucoside***
$C_{29}H_{34}O_{13}$ 590.58
Constit. of seeds of *Amorpha fruticosa*. Faintly yellow cryst. Mp 189-192° dec. $[\alpha]_D^{20}$-94.7 (c, 1.3 in MeOH).

*1′,3′-Dihydro, 1′-hydroxy, 1′-*O*-[α-L-arabinopyranosyl-(1→6)-β-D-glucopyranoside]:* [53947-91-4] ***Amorphol***
$C_{34}H_{42}O_{17}$ 722.696
Constit. of the roots of *Amorpha fruticosa*. Yellowish powder. Mp 159-162° dec. $[\alpha]_D^{22}$-96.6 (c, 2.07 in MeOH). Incorr. descr. as a dioxin deriv. in CA owing to a drawing error in the paper.

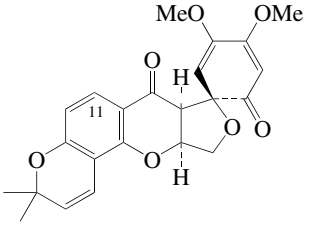
6a,12a-Didehydro: [29444-01-7] ***Dehydroamorphigenin***
$C_{23}H_{20}O_7$ 408.407
Constit. of seeds of *Amorpha* spp. Pale yellow needles. Mp 228.5-229.5° dec. $[\alpha]_D^{19}$-50.8 (c, 0.83 in $CHCl_3$).

6a,12a-Didehydro, 6-oxo: [159663-17-9] ***6-Ketodehydroamorphigenin***
$C_{23}H_{18}O_8$ 422.39
Constit. of the stem bark of *Dalbergia sissoides*. Bright yellow plates ($CHCl_3$/EtOH). Mp 300° (298°) dec. Stereochem. not confirmed.

[10475-72-6, 142129-85-9]

Claisse, J. *et al., JCS*, 1964, 6023-6036 (*Amorphin, Dehydroamorphigenin, struct, bibl*)
Kasymov, A.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1968, **4**, 277 (*Amorphigenin β-glucoside*)
Kasymov, A.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1970, **6**, 192-195 (*Amorphigenol β-glucoside*)
Kasymov, A.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1972, **8**, 109-110 (*Dihydroamorphigenin*)
Kadyrova, F.R. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1973, **9**, 257-258 (*Fruticin*)
Crombie, L. *et al., JCS Perkin 1*, 1973, 1285-1294 (*Amorphigenin, biosynth*)
Kasymov, A.U. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1974, **10**, 470-473 (*Amorphol*)
Crombie, L. *et al., JCS Perkin 1*, 1975, 1497-1499 (*cmr*)
Khodzhaev, K.N. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1982, **18**, 585-587 (*Fruticin*)
Crombie, L. *et al., JCS Perkin 1*, 1982, 789-798 (*Amorphin, Amorphigenol*)
Kostova, I. *et al., Org. Mass Spectrom.*, 1985, **20**, 765-769 (*Amorphigenin, ms*)
Somleva, T. *et al., Planta Med.*, 1985, 219-221 (*Demethylamorphigenin*)
Bhandari, P. *et al., JCS Perkin 1*, 1992, 839-849 (*Amorphigenin, biosynth*)
Bhandari, P. *et al., JCS Perkin 1*, 1992, 851-863 (*Amorphigenin, biosynth*)
Terada, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 187-190 (*Amorphigenin*)
Leping, L. *et al., J. Nat. Prod.*, 1993, **56**, 690-698 (*Amorpha fruticosa constits, activity*)
Sripathi, S.K. *et al., Phytochemistry*, 1994, **37**, 911-912 (*6-Ketodehydroamorphigenin*)
Crombie, L. *et al., Phytochemistry*, 1998, **49**, 1479-1507 (*Amorphigenin, rev, biosynth*)
Svasti, J. *et al., Phytochemistry*, 1999, **50**, 739-743 (*Dalbergia cochinchinensis constit, Dalcochinin*)
López-Lázaro, M. *et al., Stud. Nat. Prod. Chem.*, 2002, **27**, 891-932 (*Amorphigenin, activity, sar, rev*)
Chin, Y.-W. *et al., J. Nat. Prod.*, 2006, **69**, 1649-1652 (*Berchemia discolor constit, struct, activity*)
Diao, Y.P. *et al., Chin. Chem. Lett.*, 2009, **20**, 942-944 (*Amorphin*)

Amorphispironone **A-70**
*10′,10′*a*-Dihydro-4,5-dimethoxy-3′,3′-dimethylspiro[3,5-cyclohexadiene-1,8′-[3*H*,8*H*]furo[3,4-*e*′]benzo[1,2-*b*:3,4-*b*′]dipyran]-2,7′(7a*H*)-dione, 9CI*
[139006-28-3]



Absolute Configuration

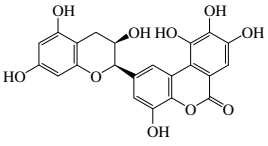
$C_{23}H_{22}O_7$ 410.423
Constit. of the leaves and twigs of *Amorpha fruticosa*. Cytotoxic agent. Cryst. (MeOH aq.). Mp 152-152.5°. $[\alpha]_D^{27}$-383.2 (c, 0.24 in MeOH). $[\alpha]_D^{25}$-18.1 (c, 0.1 in MeOH). λ_{max} 209 (ϵ 13400); 269 (ϵ 31900); 316 (ϵ 9000) (MeOH).

11-Hydroxy: [1060711-34-3] ***11-Hydroxyamorphispironone***
$C_{23}H_{22}O_8$ 426.422
Constit. of *Amorpha fruticosa*. Inhibits NF-κB activation and suppresses the expression of NF-κB target genes. Yellow powder. $[\alpha]_D^{25}$-29.1 (c, 0.1 in MeOH). λ_{max} 209 (log ϵ 3.37); 274 (log ϵ 3.6); 314 (log ϵ 3.25) (MeOH).

Li, L. *et al., Chem. Comm.*, 1991, 1652-1653 (*cryst struct*)
Terada, H. *et al., Chem. Pharm. Bull.*, 1993, **41**, 187-190 (*Amorphispironone*)
Nguyen, T.D. *et al., J. Nat. Prod.*, 2008, **71**, 1696-1700 (*Amorphispironone, cd, 11-Hydroxyamorphispironone, activity*)

Amurensisin A-71

[280576-19-4]

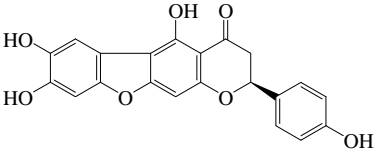


Relative Configuration

$C_{22}H_{16}O_{10}$ 440.362
Constit. of the seeds of *Vitis amurensis*. Amorph. powder. $[\alpha]_D^{22}$-47 (c, 0.03 in MeOH). λ_{max} 207 (log ϵ 4.95); 262 (log ϵ 4.2); 320 (log ϵ 4.05) (MeOH).

Wang, J.-N. *et al., Phytochemistry*, 2000, **53**, 1097-1102 (*Amurensisin*)

Anastatin A A-72

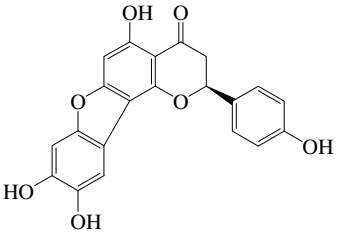


$C_{21}H_{14}O_7$ 378.337

(S)-form [571186-32-8]
Constit. of *Anastatica hierochuntica*. Shows *in vitro* hepatoprotective effects in cultured murine hepatocytes. Melanogenesis inhibitor. Yellow powder. $[\alpha]_D^{24}$+121.3 (c, 0.63 in MeOH). λ_{max} 247 (log ϵ 4.1); 268 (log ϵ 4.3); 297 (log ϵ 4.2); 371 (log ϵ 3.3) (MeOH).

Yoshikawa, M. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 1045-1049 (*Anastatin A, struct, cd, abs config, hepatoprotective activity*)
Nakashima, S. *et al., Bioorg. Med. Chem.*, 2010, **18**, 2337-2345 (*Anastatica hierochuntica constit, melanogenesis inhibitor*)

Anastatin B A-73



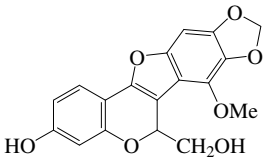
$C_{21}H_{14}O_7$ 378.337

(S)-form [571186-33-9]
Constit. of *Anastatica hierochuntica*. Shows *in vitro* hepatoprotective effects in cultured murine hepatocytes. Yellow powder. $[\alpha]_D^{24}$+149 (c, 0.52 in MeOH). λ_{max} 243 (log ϵ 4.2); 263 (log ϵ 4.3); 295 (log ϵ 4.2); 365 (log ϵ 3.4) (MeOH).

Yoshikawa, M. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 1045-1049 (*Anastatin B: struct, hepatoprotective activity*)

Andirol A A-74

3-Hydroxy-6-hydroxymethyl-7-methoxy-8,9-methylenedioxypterocarpene [479628-81-4]

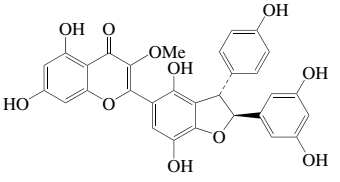


$C_{18}H_{14}O_7$ 342.304
Constit. of the leaves of *Andira inermis*. Yellow needles. $[\alpha]_D^{20}$+5.3 (c, 0.08 in $CHCl_3$).

Demethoxy: [479628-82-5] *3-Hydroxy-6-hydroxymethyl-8,9-methylenedioxypterocarpene.* ***Andirol B***
$C_{17}H_{12}O_6$ 312.278
Constit. of the leaves of *Andira inermis*. Yellow needles.

Kraft, C. *et al., Z. Naturforsch., C*, 2002, **57**, 785-790 (*Andirols A,B, struct*)

Androyol A-75



$C_{30}H_{22}O_{11}$ 558.497
Flavonostilbene dimer. Constit. of *Alluaudia dumosa*. Occurs as a racemate or partial racemate which is resolvable by paper chromatog.

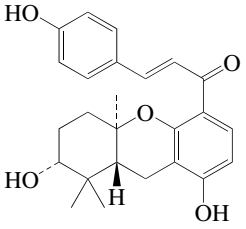
(+)-form [138256-86-7]
$[\alpha]_D$+133 (c, 1.28 in MeOH). λ_{max} 268 (log ϵ 1.75); 361 (log ϵ 1.11) (MeOH).

(-)-form [138195-39-8]
$[\alpha]_D$-124 (c, 0.01 in MeOH).

Rasamoelisendra, R. *et al., Phytochemistry*, 1991, **30**, 1665-1667 (*Alluaudia dumosa constit, struct*)

Angelichalcone A-76

[1192621-09-2]



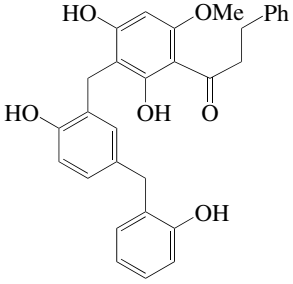
Relative Configuration

$C_{25}H_{28}O_5$ 408.493
Constit. of *Angelica keiskei*. Yellow solid. $[\alpha]_D^{26}$+30.3 (c, 1 in EtOH).

Topczewski, J.J. *et al., JACS*, 2009, **131**, 14630-14631 (*Angelichalcone*)

Angoluvarin A-77

[110874-65-2]

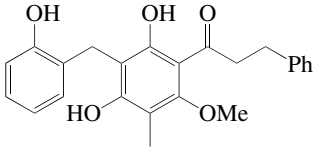


$C_{30}H_{28}O_6$ 484.548
Constit. of *Uvaria angolensis* and *Uvaria leptocladon*. Cryst. Mp 154-156°. λ_{max} 218 (ϵ 28400); 250 (ϵ 6340); 286 (ϵ 99700); 326 (ϵ 12700) (MeOH) (Derep). λ_{max} 218 (ϵ 28400); 250 (ϵ 6340); 286 (ϵ 9970); 326 (ϵ 12700) (MeOH) (Berdy).

Hufford, C.D. *et al., JOC*, 1987, **52**, 5286-5288 (*Angoluvarin*)
Nkunya, M.H.H. *et al., Phytochemistry*, 1993, **32**, 1297-1300 (*Angoluvarin*)
Nutaitis, C.F. *et al., Tet. Lett.*, 2010, **51**, 5497-5499 (*synth*)

Anguvetin A-78

1-[2,4-Dihydroxy-3-[(2-hydroxyphenyl)-methyl]-6-methoxy-5-methylphenyl]-3-phenyl-1-propanone, 9CI. 2′,4′-Dihydroxy-3′-(2-hydroxybenzyl)-6-methoxy-5-methyldihydrochalcone. Isoangoletin (incorr.) [83109-27-7]

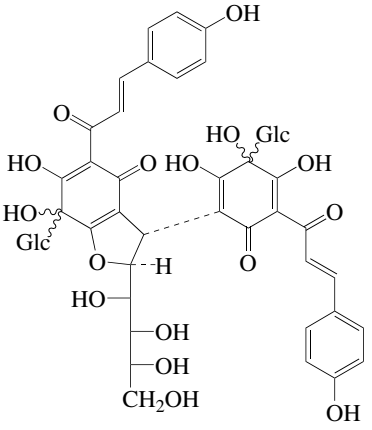


$C_{24}H_{24}O_5$ 392.451
Constit. of *Uvaria angolensis* and *Uvaria puguensis*. Cryst. ($CHCl_3$/hexane). Poorly sol. hexane. Mp 148-150°. The incorrect synonym Isoangoletin was assigned to the isolate from *U. puguensis*. λ_{max} 218 (ϵ 16900); 286 (ϵ 8580); 340 (ϵ 9310) (MeOH) (Berdy).

Hufford, C.D. *et al., J. Nat. Prod.*, 1982, **45**, 337-342 (*Uvaria angolensis constit*)
Makangara, J.J. *et al., Nat. Prod. Lett.*, 2002, **16**, 267-272 (*Isoangoletin*)

Anhydrosafflor Yellow B A-79

[184840-84-4]

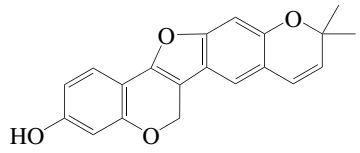


$C_{48}H_{52}O_{26}$ 1044.923
Isol. from *Carthamus tinctorius*. Biosynth. intermed. of Carthamin, C-58. Amorph. yellow powder. λ_{max} 230 (log ϵ 4.33); 410 (log ϵ 4.62) (MeOH).

Kazuma, K. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 1588-1599 (*occur, struct*)

Anhydrotuberosin A-80

*10,10-Dimethyl-6*H*,10*H*-furo[3,2-*c*:4,5-g′]bis[1]benzopyran-3-ol,* $_9C_{14}$ [41347-49-3]



$C_{20}H_{16}O_4$ 320.344
Constit. of *Pueraria tuberosa*. Cryst. (Me_2CO/CH_2Cl_2), yellow needles (Me_2CO aq.). Mp 186°. λ_{max} 238; 262; 330; 350 (MeOH).

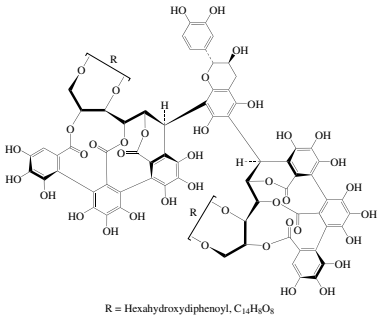
Ac: Mp 164°.

3-Me ether: [41347-50-6] ***3*-O-*Methylanhydrotuberosin***
$C_{21}H_{18}O_4$ 334.371
From *Pueraria tuberosa*. Cryst. (hexane/CH_2Cl_2). Mp 165°.

Joshi, B.S. *et al., JCS Perkin 1*, 1973, 907-911 (*synth, Ac*)
Prasad, A.V. *et al., Indian J. Chem., Sect. B*, 1985, **24**, 236-239 (*Pueraria tuberosa constits*)
Khan, R.A. *et al., J. Het. Chem.*, 2011, **48**, 168-175 (*Anhydrotuberosin*)

Anogeissinin A-81

[161205-68-1]

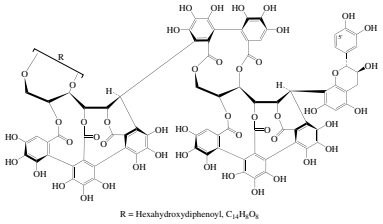


$C_{97}H_{62}O_{56}$ 2123.523
A flavano-ellagitannin constit. of the bark of *Anogeissus acuminata*. Tan amorph. powder + $3H_2O$. $[\alpha]_D^{20}$ +6.5 (c, 1.1 in MeOH).

Lin, T.-C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1144-1147 (*Anogeissinin, struct, synth*)

Anogeissusin A A-82

[161161-61-1]



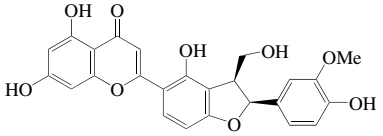
$C_{97}H_{62}O_{56}$ 2123.523
A flavano-ellagitannin from the bark of *Anogeissus acuminata*. Tan amorph. powder + $3H_2O$. $[\alpha]_D^{20}$ +15.3 (c, 1.0 in MeOH).

5′-Hydroxy: [161161-62-2] ***Anogeissusin B***
$C_{97}H_{62}O_{57}$ 2139.523
Isol. from the bark of *Anogeissus acuminata* var. *lanceolata*. Tan powder + $3H_2O$. $[\alpha]_D^{21}$ +10.1 (c, 1 in MeOH).

Lin, T.-C. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1144-1147 (*Anogeissusins A,B, struct, synth*)

Anthelminthicol A A-83

[1340493-70-0]



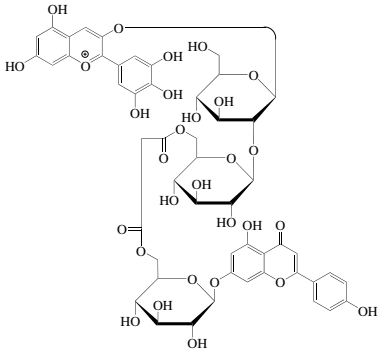
Relative Configuration

$C_{25}H_{20}O_9$ 464.428
Related to Isohydnocarpin, I-47. Constit. of the seeds of *Hydnocarpus anthelminthica*. Amorph. yellow powder. λ_{max} 281 (log ϵ 5.23); 339 (log ϵ 5.01); 385 (log ϵ 5.05) (MeOH).

Wang, J.-F. *et al., J. Asian Nat. Prod. Res.*, 2011, **13**, 80-83 (*Anthelminthicol A*)

Eichhornia Anthocyanin A A-84

*[6‴-*O*-(Delphinidin 3-*O*-sophorosyl)] 6″-*O*-(apigenin 7-*O*-β-D-glucopyranosyl)-malonate* [157501-11-6]

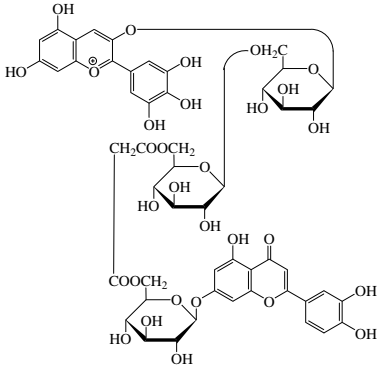


$C_{51}H_{51}O_{29}^{\oplus}$ 1127.946
Constit. of the flowers of *Eichhornia crassipes*. Purple-red powder (as acetate). CAS number refers to chloride. λ_{max} 272; 342; 548 (MeOH/0.1% HCl).

Toki, K. *et al., Phytochemistry*, 1994, **36**, 1181-1183 (*Eichhornia anthocyanin A, struct*)

Eichhornia Anthocyanin B A-85

[738599-75-2]

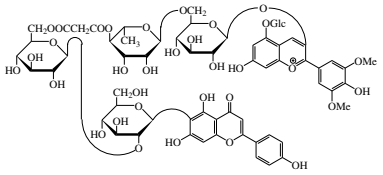


$C_{51}H_{51}O_{30}^{\oplus}$ 1143.946
Constit. of the flowers of *Eichhornia crassipes*. λ_{max} 272; 351; 547 (HCl/MeOH).

Toki, K. *et al., Heterocycles*, 2004, **63**, 899-902 (*Eichhornia Anthocyanin B, struct*)

Oxalis Anthocyanin-flavone dimer A-86

[934754-96-8]



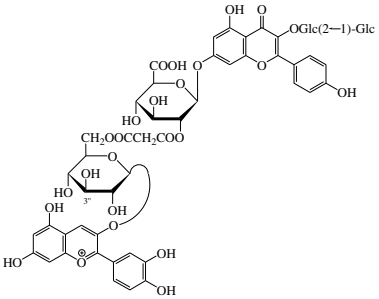
$C_{65}H_{75}O_{38}^{\oplus}$ 1464.285

Constit. of the leaves of *Oxalis triangularis*. λ_{max} 276; 310; 346 (MeOH/0.1% HCl).

Fossen, T. *et al., Phytochemistry*, 2007, **68**, 652-662 (*struct, pmr, cmr, ms*)

Allium schoenoprasum Anthocyanin-flavonol **A-87**

[289656-01-5]



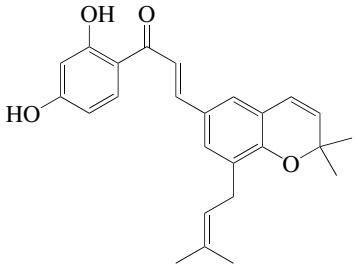
$C_{57}H_{59}O_{35}^{\oplus}$ 1304.072
Constit. of the flowers of *Allium schoenoprasum*.

3″-Ac: [289656-02-6]
$C_{59}H_{61}O_{36}^{\oplus}$ 1346.109
Constit. of the flowers of *Allium schoenoprasum*.

Fossen, T. *et al., Phytochemistry*, 2000, **54**, 317-323 (*Allium schoenoprasum constits*)

Anthyllisone **A-88**

[178734-43-5]

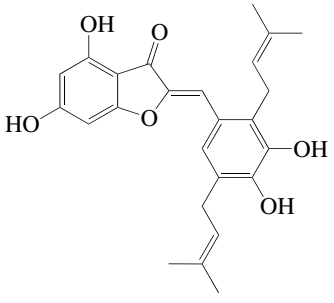


$C_{25}H_{26}O_4$ 390.478
Constit. of *Anthyllis hermanniae*. λ_{max} 256; 285 (sh); 381 (MeOH).

Pistelli, L. *et al., Phytochemistry*, 1996, **42**, 1455-1458 (*Anthyllisone, struct*)

Antiarone A **A-89**

3′,4,4′,6-Tetrahydroxy-2′,5′-diprenylaurone [128864-27-7]

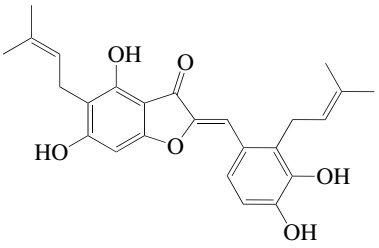


$C_{25}H_{26}O_6$ 422.477
Constit. of *Antiaris toxicaria*. Yellow cryst. ($CHCl_3$/Et_2O). Mp 220-223°. λ_{max} 205 (ϵ 40738); 267 (ϵ 7413.1); 340 (ϵ 10471);402 (ϵ 22387.1) (MeOH).

Hano, Y. *et al., Heterocycles*, 1990, **30**, 1023-1030 (*Antiarone A, struct*)

Antiarone B **A-90**

3′,4,4′,6-Tetrahydroxy-2′,5-diprenylaurone [128883-66-9]

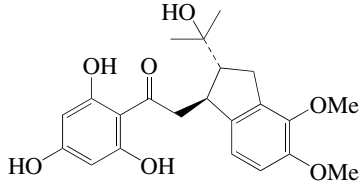


$C_{25}H_{26}O_6$ 422.477
Constit. of *Antiaris toxicaria*. Yellow cryst. ($CHCl_3$). Mp 217-220°. λ_{max} 206 (ϵ 28184); 269 (ϵ 5754); 344 (ϵ 3802); 401 (ϵ 15488.1) (MeOH).

Hano, Y. *et al., Heterocycles*, 1990, **30**, 1023-1030 (*Antiarone B, struct*)

Antiarone K **A-91**

[137196-97-5]



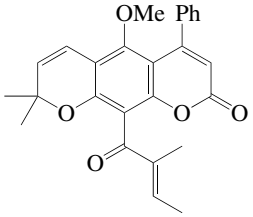
Relative Configuration

$C_{22}H_{26}O_7$ 402.443
Constit. of the root bark of *Antiaris toxicaria*. Prisms. Mp 117-119°. Racemate. λ_{max} 206 (log ϵ 4.61); 223 (log ϵ 4.36); 287 (log ϵ 4.32) (MeOH). λ_{max} 240 (sh); 323 (log ϵ 3.46) (MeOH/NaOH).

Hano, Y. *et al., J. Nat. Prod.*, 1991, **54**, 1049-1055 (*Antiarone K, cryst struct*)

Apetatolide **A-92**

Apetalolide [22562-09-0]



$C_{26}H_{24}O_5$ 416.473
Structure finally confirmed in 2010.
Constit. of the nuts of *Calophyllum apetalum*. Amorph. powder. Mp 203-205°.

Palmer, C.J. *et al., JCS Perkin 1*, 1995, 3135-3152 (*synth*)

Zou, J. *et al., Helv. Chim. Acta*, 2010, **93**, 1812-1821 (*Apetalolide, struct*)

Apigenin 4′,7-diglycosides **A-93**

Glycosides of 4′,5,7-Trihydroxyflavone, T-693 with sugar residues at both C-4′ and C-7.

4′,7-Di-O-β-D-allopyranoside: [95693-63-3] *TT-a*
$C_{27}H_{30}O_{15}$ 594.525
Constit. of *Thalictrum thunbergii*, *Thalictrum squarrosum* and *Thalictrum minus*. Pale yellow needles. Mp 248-251°. $[\alpha]_D^{21}$-138.7 (c, 1.06 in Py).

4′-O-β-D-Allopyranoside, 7-O-(6-O-acetyl-β-D-allopyranoside): [95690-52-1] *TT-b*
$C_{29}H_{32}O_{16}$ 636.562
Constit. of *Thalictrum thunbergii*, *Thalictrum squarrosum* and *Thalictrum minus*. Pale yellow needles. Mp 257-260°. $[\alpha]_D^{20}$-102.4 (c, 1.03 in Py).

4′-O-β-D-Allopyranoside, 7-O-(4,6-di-O-acetyl-β-D-allopyranoside): [95690-53-2] *TT-c*
$C_{31}H_{34}O_{17}$ 678.599
Constit. of *Thalictrum thunbergii*. Pale yellow needles. Mp 168-170°. $[\alpha]_D^{21}$-81.6 (c, 1.03 in Py).

4′-O-α-L-Rhamnopyranoside, 7-O-β-D-glucopyranoside: [160669-56-7]
$C_{27}H_{30}O_{14}$ 578.526
Constit. of *Ranunculus sieboldii*. Pale yellow cryst. Mp 212-214°. $[\alpha]_D^{28}$-185 (c, 0.73 in DMSO). λ_{max} 271; 318 (MeOH).

4′-O-α-L-Rhamnopyranoside, 7-O-β-D-glucuronopyranoside: [58970-78-8] *Apigenin 7-glucuronide 4′-rhamnoside*
$C_{27}H_{28}O_{15}$ 592.509
Isol. from *Conocephalum conicum*. No phys. props. reported.

4′-O-α-L-Rhamnopyranoside, 7-O-[α-L-rhamnopyranosyl-(1→4)-α-L-rhamnopyranoside]: [1268381-75-4]
$C_{33}H_{40}O_{17}$ 708.669
Constit. of the fronds of *Asplenium normale*. Pale yellow powder. λ_{max} 269; 317 (MeOH). λ_{max} 286; 370 (MeOH/NaOH).

4′-O-β-D-Glucofuranoside, 7-O-[α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]: [52714-83-7] *Apigenin 4′-glucofuranoside 7-rutinoside*
$C_{33}H_{40}O_{19}$ 740.668
Isol. from *Galium mollugo*.

4′,7-Di-O-β-D-glucopyranoside: [31737-50-5] *Apigenin 4′,7-diglucoside*
$C_{27}H_{30}O_{15}$ 594.525
Constit. of *Salvia uliginosa*, pollen of *Taxus baccata* andseeds of *Crotalaria juncea*. λ_{max} 269; 317 (MeOH).

4′-O-β-D-Glucopyranoside, 7-O-[α-L-rhamnopyranosyl-(1→2)-β-D-glucopyranoside]: [31498-83-6] *Apigenin 7-neohesperidoside 4′-glucoside. Rhoifolin 4′-glucoside*
$C_{33}H_{40}O_{19}$ 740.668
Isol. from *Hedwigia ciliata*. Yellowish needles (EtOH aq.). Mp 212-214°. $[\alpha]_D^{23}$-98.5 (c, 1.12 in Py).

4′-O-*β*-D-*Glucopyranoside, 7*-O-*[α*-L-*rhamnopyranosyl-(1→?)-β*-D-*glucopyranoside]:* [42862-18-0]
$C_{33}H_{40}O_{19}$ 740.668
Constit. of the leaves of *Sophora tetraptera*.

4′-O-*β*-D-*Glucopyranoside, 7*-O-*[β*-D-*glucopyranosyl-(1→4)-β*-D-*glucopyranoside]:* [211096-98-9] *Apigenin 7-cellobioside 4′-glucoside*
$C_{33}H_{40}O_{20}$ 756.667
Constit. of *Salvia uliginosa*. λ_{max} 269; 317 (MeOH).

4′-O-*β*-D-*Glucopyranoside, 7*-O-*[β*-D-*galacturonopyranosyl-(1→?)-β*-D-*galacturonopyranoside]:* [126207-51-0] *Apigenin 7-digalacturonoside 4′-glucoside*
$C_{33}H_{36}O_{22}$ 784.634
Isol. from *Cuminum cyminum*.

4′-O-*(6*-O-*Malonyl-β*-D-*glucopyranoside), 7*-O-*β*-D-*glucuronopyranoside:* [89483-03-4]
$C_{30}H_{30}O_{19}$ 694.556
Constit. of complex pigment of *Centaurea cyanus*. Mp 240°.

4′,7-Di-O-*β*-D-*glucuronopyranoside:* [51008-82-3] *Apigenin 4′,7-diglucuronide*
$C_{27}H_{26}O_{17}$ 622.492
Isol. from *Antirrhinum majus* and other plants. $[\alpha]_D^{28}$-142.3 (c, 0.39 in Py aq.). Dec. at 185°.

4′-O-*β*-D-*Glucuronopyranoside, 7*-O-*[β*-D-*glucuronopyranosyl-(1→2)-β*-D-*glucuronopyranoside]:* [332422-31-8]
$C_{33}H_{34}O_{23}$ 798.618
Constit. of *Medicago sativa*. Amorph. yellow powder. Mp 182-183° dec. $[\alpha]_D^{20}$-50.8 (c, 0.05 in MeOH aq.).

4′-O-*β*-D-*Glucuronopyranoside, 7*-O-*[4-hydroxy-3-methoxy*-E-*cinnamoyl-(→2)-β*-D-*glucuronopyranosyl-(1→2)-β*-D-*glucuronopyranoside]:* [332422-32-9]
$C_{43}H_{42}O_{26}$ 974.789
Constit. of *Medicago sativa*. Amorph. yellow powder. Mp 205-206°. $[\alpha]_D^{20}$-13.8 (c, 0.1 in MeOH). λ_{max} 271; 323 (MeOH).

4′-O-*β*-D-*Glucuronopyranoside, 7*-O-*[β*-D-*glucuronopyranosyl-(1→?)-β*-D-*glucuronopyranoside]:* [58978-41-9] *Apigenin 7-diglucuronide 4′-glucuronide*
$C_{33}H_{34}O_{23}$ 798.618
Isol. from *Conocephalum conicum*. No phys. props. reported.

4′-O-*[α*-L-*Rhamnopyranosyl-(1→6)-β*-D-*glucopyranoside], 7*-O-*α*-L-*rhamnopyranoside:* [120282-90-8] *Apigenin 7-rhamnoside 4′-rutinoside*
$C_{33}H_{40}O_{18}$ 724.668
Isol. from *Sesbania rostrata*.

4′-O-*[β*-D-*Glucopyranosyl-(1→3)-α*-L-*rhamnopyranoside], 7*-O-*α*-L-*rhamnopyranoside:* [149158-09-8]
$C_{33}H_{40}O_{18}$ 724.668
Constit. of *Asplenium normale*. Pale yellow needles (MeOH).

4′-O-*[β*-D-*Glucopyranosyl-(1→2)-β*-D-*glucopyranoside], 7*-O-*[α*-L-*rhamnopyranosyl-(1→2)-β*-D-*glucopyranoside]:* [70426-63-0] *Apigenin 7-neohesperidoside 4′-sophoroside. Rhoifolin 4′-sophoroside*
$C_{39}H_{50}O_{24}$ 902.81
Isol. from *Hedwigia ciliata*. $[\alpha]_D^{26}$-63.2 (c, 1.24 in H_2O).

4′-O-*[4-Hydroxy*-E-*cinnamoyl-(→2)-β*-D-*glucuronopyranosyl-(1→2)-β*-D-*glucuronopyranoside], 7*-O-*β*-D-*glucuronopyranoside:* [365971-57-9]
$C_{42}H_{40}O_{25}$ 944.763
Constit. of *Medicago sativa*. Amorph. powder. Mp 197-198°. $[\alpha]_D^{20}$-52.4 (c, 0.1 in MeOH). λ_{max} 272 (sh); 314 (MeOH).

4′-O-*[4-Hydroxy-3-methoxy*-E-*cinnamoyl-(→2)-β*-D-*glucuronopyranosyl-(1→2)-β*-D-*glucuronopyranoside], 7*-O-*β*-D-*glucuronopyranoside:* [365971-56-8]
$C_{43}H_{42}O_{26}$ 974.789
Constit. of *Medicago sativa*. Amorph. yellow powder. Mp 197-198°. $[\alpha]_D^{20}$-10.2 (c, 0.1 in MeOH). λ_{max} 270 (sh); 319 (MeOH).

Wagner, H. *et al., Chem. Ber.*, 1973, **106**, 2536-2541 (*4′,7-diglucuronide, synth*)
Borisov, M.I. *et al., Rastit. Resur.*, 1974, **10**, 66-71 (*Galium mollugo constit, struct*)
Markham, K.R. *et al., Phytochemistry*, 1976, **15**, 147-150 (*7-glucuronide 4′-rhamnoside, 7-diglucuronide 4′-glucuronide*)
Osterdahl, B.G. *et al., Acta Chem. Scand., Ser. B*, 1979, **33**, 119-124 (*Hedwigia ciliata constits, struct*)
Tamura, H. *et al., Tet. Lett.*, 1983, **24**, 5749-5752 (*7-glucuronide 4′-6-malonylglucoside*)
Shimizu, E. *et al., Chem. Pharm. Bull.*, 1985, **32**, 5023-5026 (*TT-a, TT-b, TT-c, struct*)
The Flavonoids: Advances in Research Since 1980, (ed. Harborne, J.B.), Chapman and Hall, 1988,
Messens, E. *et al., Carbohydr. Res.*, 1989, **186**, 241-253 (*7-rhamnoside 4′-rutinoside, struct*)
El-Negoumy, S.I. *et al., CA*, 1990, **112**, 175645x (*cumin glycoside*)
Kikuchi, M. *et al., J. Nat. Prod.*, 1996, **59**, 314-315 (*7-gentiobioside, 7-sophoroside*)
Veitch, N.C. *et al., Phytochemistry*, 1998, **48**, 389-393 (*Salvia uliginosa glucosides*)
Huang, Y. *et al., Phytochemistry*, 1999, **52**, 1701-1703 (*3-rhamnosylglucuronoside*)
Khamidullina, E.A. *et al., Russ. Chem. Bull. (Engl. Transl.)*, 1999, **48**, 390-392 (*Thalictrum squarrosum constits, Thalictrum minus constits, struct*)
Stochmal, A. *et al., J. Agric. Food Chem.*, 2001, **49**, 753-758 (*alfalfa glucuronides*)
Stochmal, A. *et al., Phytochemistry*, 2001, **57**, 1223-1226 (*alfalfa glucuronides*)
Iwashina, T. *et al., Biochem. Syst. Ecol.*, 2003, **31**, 51-58 (*4′-3-glucosylrhamnoside 7-rhamnoside*)
Pan, Y.-X. *et al., J. Chin. Pharm. Sci.*, 2004, **13**, 92-96 (*4′-rhamnoside 7-glucoside*)
Flavonoids: Chemistry and Biochemistry, (ed. Andersen, O.M. *et al*), CRC Press, 2005,
Li, H. *et al., Planta Med.*, 2005, **71**, 1128-1133 (*7-glucoside 4′-rhamnoside*)
Iwashina, T. *et al., Nat. Prod. Commun.*, 2010, **5**, 39-42 (*4′-rhamnoside 7-rhamnosylrhamnoside*)

Apigenin 7-glycosides A-94

Glycosides of 4′,5,7-Trihydroxyflavone, T-693 with sugar residues at *O*-7 only. See also Cosmosiin, C-154.

7-O-*α*-L-*Arabinopyranoside:* [77610-88-9] *Apigenin 7-arabinoside*
$C_{20}H_{18}O_9$ 402.357
Isol. from *Hieracium umbellatum* and *Marrubium alysson*. Mp 252-255°.

7-O-*β*-D-*Xylopyranoside:* [54595-43-6] *Apigenin 7-xyloside*
$C_{20}H_{18}O_9$ 402.357
Isol. from *Muscari armeniacum* and *Salvia* spp.

7-O-*β*-D-*Allopyranoside:* [527704-27-4] *Apigenin 7-alloside*
$C_{21}H_{20}O_{10}$ 432.383
Constit. of *Cassia occidentalis*. Mp 180°. λ_{max} 268; 333 (MeOH).

7-O-*α*-L-*Rhamnopyranoside:* [88109-95-9] *Apigenin 7-rhamnoside*
$C_{21}H_{20}O_9$ 416.384
Isol. from *Crataegus curvisepala*, *Eupatorium hookerianum*,*Pituranthos scoparius* and *Salix babylonica*. Mp 284-285°. $[\alpha]_D^{20}$-130 (EtOH).

7-O-*β*-D-*Galactopyranoside:* [23598-21-2] *Apigenin 7-galactoside.* ***Thalictiin***
$C_{21}H_{20}O_{10}$ 432.383
Isol. from *Thalictrum thunbergii* and *Chrysanthemum morifolium*. Yellow needles (Py aq.). Mp 238-239.5°. $[\alpha]_D^{19}$-49.4 (-116) (Py/EtOH 9:1).

7-O-*[4-Hydroxy*-E-*cinnamoyl-(→6)-β*-D-*galactopyranoside]:* [480453-57-4]
$C_{30}H_{26}O_{12}$ 578.528
Constit. of *Lagopsis supina*. Mp 194-196°.

7-O-*[3,6-Bis*-O-*(4-hydroxy*-E-*cinnamoyl)-β*-D-*galactopyranoside]:* [480990-58-7]
$C_{39}H_{32}O_{14}$ 724.673
Constit. of *Lagopsis supina*. Mp 206-207°.

7-O-*[4-Hydroxybenzoyl-(→6)-β*-D-*glucopyranoside]:* [1262046-94-5]
$C_{28}H_{24}O_{12}$ 552.49
Constit. of the fruit of *Malabaila suaveolens.*

7-O-*β*-D-*Galacturonopyranoside:* [56317-11-4] *Apigenin 7-galacturonide*
$C_{21}H_{18}O_{11}$ 446.367
Isol. from *Marchantia berteroana*, *Scutellaria schachristiana* and *Jacaranda mimosaefolia*. No phys. props. reported. Mp 236.6°.

7-O-*(6*-O-*Methyl-β*-D-*galacturonopyranoside):* [29781-25-7] *Apigenin 7-(methylgalacturonide)*
$C_{22}H_{20}O_{11}$ 460.393
Isol. from *Centaurea calcitrapa* and *Tanacetum cinerariifolium*. Yellow needles (MeOH aq.). Mp 245-248°.

7-O-*β*-D-*Glucuronopyranoside:* [29741-09-1] *Apigenin 7-glucuronide*
$C_{21}H_{18}O_{11}$ 446.367
Occurs in *Antirrhinum majus*, *Phlomis tuberosa*, *Ruelliatuberosa*, *Keiskea japonica*, *Chrysanthemum morifolium*and *Anisomeles indica*. Hyaluronidase inhibitor. Mod. potent inhibitor of *Helicobacter pylori* growth. Rat lens aldose reductase inhibitor. Cryst. (H_2O). $[\alpha]_D^{27}$-103 (c, 0.605 in Py aq.). Dec. at 172-174°. Also said to melt >300°.

7-O-*(*O-*Sulfo-β*-D-*glucuronopyranoside):* [88873-15-8]

$C_{21}H_{18}O_{14}S$ 526.431
Isol. from *Fuchsia procumbens*.

7-O-*(6-O-Methyl-β-D-glucuronopyranoside):* [53538-13-9] *Apigenin 7-(O-methylglucuronide)*
$C_{22}H_{20}O_{11}$ 460.393
Isol. from flowers of *Adenocalymma alliaceum*. Cryst. (MeOH). Mp 240-242°.

7-O-*(6-O-Ethyl-β-D-glucuronopyranoside):* [62268-42-2] *Apigenin 7-O-ethylglucuronide*
$C_{23}H_{22}O_{11}$ 474.42
Constit. of *Centaurea aspera* and *Silybum marianum*. Cryst. ($CHCl_3$/EtOH). Mp 220-223°.

7-O-*(6-O-Butyl-β-D-glucuronopyranoside):* [145940-28-9] ***Thellungianate***
$C_{25}H_{26}O_{11}$ 502.474
Constit. of *Pimpinella thellungiana*.

7-O-*(2-O-Acetyl-6-O-methyl-β-D-glucuronopyranoside):* [137162-04-0] *Apigenin 7-(2-acetyl-6-methylglucuronide)*
$C_{24}H_{22}O_{12}$ 502.431
Isol. from *Calluna vulgaris*. Powder.

7-O-*[3,4-Dihydroxy-*E*-cinnamoyl-(→4)-β-D-glucuronopyranoside]:* [664997-02-8] *Apigenin 7-(4-caffeoylglucuronide)*
$C_{30}H_{24}O_{14}$ 608.511
Constit. of the flowers of *Chrysanthemum morifolium*. Inhibitor of HIV-1 integrase. Pale yellow powder. $[\alpha]_D^{23}$ + 30.8 (c, 0.25 in MeOH aq.). λ_{max} 270 (log ϵ 2.59); 325 (log ϵ 3.39) (MeCN).

7-O-*[β-D-Apiofuranosyl-(1→2)-β-D-glucopyranoside]:* [26544-34-3] ***Apiin***. *7-(2-Apiosylglucosyl)apigenin*
$C_{26}H_{28}O_{14}$ 564.499
Constit. of *Petroselinum crispum* and other Umbelliferae and of *Anthemis nobilis* and from *Limonium axillare* and other plants. First isol. in 1843. Shows anticancer activity. Cryst. (EtOH). Mp 236-237°. $[\alpha]_D$-130 (c, 0.12 in MeOH). λ_{max} 267 (ϵ 15136); 342 (ϵ 19950) (MeOH) (Berdy).

7-O-*[β-D-Apiofuranosyl-(1→2)-6-O-acetyl-β-D-glucopyranoside]:* [289712-36-3] ***6″-Acetylapiin***
$C_{28}H_{30}O_{15}$ 606.536
Constit. of *Petroselinum crispum*. Powder. $[\alpha]_D^{25}$-151.6 (c, 0.4 in MeOH). λ_{max} 269 (log ϵ 4); 334 (log ϵ 4.1) (MeOH).

7-O-*[β-D-Apiofuranosyl-(1→2)-6-O-malonyl-β-D-glucopyranoside]:* [60478-75-3] ***6″-Malonylapiin***
$C_{29}H_{30}O_{17}$ 650.546
Isol. from *Petroselinum crispum*.

7-O-*[β-D-Apiofuranosyl-(1→6)-β-D-glucopyranoside]:* [165073-98-3]
$C_{26}H_{28}O_{14}$ 564.499
Constit. of *Gonocaryum calleryanum*. Yellow powder. $[\alpha]_D^{16}$ +8.8 (c, 0.8 in Py). λ_{max} 268; 331 (MeOH).

7-O-*[α-L-Arabinofuranosyl-(1→6)-β-D-glucopyranoside]:* [111537-39-4]
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Dacrydium intermedium* and *Dacrydium laxifolium*.

7-O-*[α-L-Arabinopyranosyl-(1→6)-β-D-glucopyranoside]:* [111537-38-3]
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Dacrydium intermedium* and *Dacrydium laxifolium*.

7-O-*[α-L-Arabinopyranosyl-(1→?)-β-D-glucopyranoside]:*
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Hieracium umbellatum*.

7-O-*[Arabinosyl-(1→?)-glucoside]:* [83861-04-5] *Apigenin 7-arabinosylglucoside*
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Oxytropis monticola* ssp. *monticola*.

7-O-*[β-D-Xylopyranosyl-(1→2)-β-D-glucopyranoside]:* [31243-39-7] *Apigenin 7-sambubioside*
$C_{26}H_{28}O_{14}$ 564.499
Isol. from petals of *Colchicum speciosum*. Mp 234-238°.

7-O-*[β-D-Xylopyranosyl-(1→6)-β-D-glucopyranoside]:* [111537-37-2]
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Dacrydium intermedium* and *Dacrydium laxifolium*.

7-O-*[Xylosyl-(1→?)-glucoside]:* [83861-05-6] *Apigenin 7-xylosylglucoside*
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Oxytropis jordalii* ssp. *jordalii*, *Cymophyllus fraseri* and *Frullania divurica*.

7-O-*[α-D-Xylopyranosyl-(1→?)-β-D-glucuronopyranoside]: Apigenin 7-(xylosylglucuronide)*
$C_{26}H_{26}O_{15}$ 578.482
Isol. from *Tanacetum niveum*.

7-O-*[α-L-Rhamnopyranosyl-(1→3)-α-L-rhamnopyranoside]:* [131405-86-2]
$C_{27}H_{30}O_{13}$ 562.526
Isol. from *Asplenium normale*.

7-O-*[α-L-Rhamnopyranosyl-(1→4)-α-L-rhamnopyranoside]:* [1269438-73-4]
$C_{27}H_{30}O_{13}$ 562.526
Constit. of the fronds of *Asplenium normale*. Pale yellow powder. λ_{max} 267; 335 (MeOH). λ_{max} 274; 379 (MeOH/NaOH).

7-O-*[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranoside]:* [17306-46-6] *Apigenin 7-neohesperidoside*. ***Rhoifolin***. *Rhoifoloside*
$C_{27}H_{30}O_{14}$ 578.526
Isol. from *Chorisia* spp., *Citrus aurantium*, *Rhus succedanea* and many other plant spp. Mod. potent inhibitor of α-glucosidase and α-amylase. Cryst. + $6H_2O$ (H_2O). Mp 245° (anhyd. 205-208°) Mp 251-253°. $[\alpha]_D^{29}$-110 (c, 0.21 in MeOH).

7-O-*[α-L-Rhamnopyranosyl-(1→2)-6-O-malonyl-β-D-glucopyranoside]:* [127350-66-7]
$C_{30}H_{32}O_{17}$ 664.573
Isol. from *Bryum pseudotriquetrum*.

7-O-*[α-L-Rhamnopyranosyl-(1→4)-β-D-glucopyranoside]:* [93053-01-1]
$C_{27}H_{30}O_{14}$ 578.526
Constit. of the stem bark of *Melia azedarach*. Mp 208-210°.

7-O-*[α-L-Rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:* [552-57-8] *Apigenin 7-O-rutinoside*. ***Isorhoifolin***
$C_{27}H_{30}O_{14}$ 578.526
Isol. from leaves of *Citrus paradisi*, *Saussurea medusa*, *Cynara scolymus* and other plant spp. Rat lens aldose reductase inhibitor. Small needles (MeOH). Mp 269-270°. $[\alpha]_D^{23}$-98.2 (c, 1.19 in Py).

7-O-*[3-O-Acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:* [682354-23-0]
$C_{29}H_{32}O_{15}$ 620.563
Constit. of the aerial parts of *Scoparia dulcis*. Yellow powder (MeOH). $[\alpha]_D^{27}$-45.4 (c, 0.1 in MeOH). λ_{max} 215 (log ϵ 4.4); 275 (log ϵ 3.35); 333 (log ϵ 4.1) (MeOH).

7-O-*[3,4-Di-O-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:* [1345732-57-1]
$C_{31}H_{34}O_{16}$ 662.6
Constit. of *Galium verum*.

7-O-*[α-L-Rhamnopyranosyl-(1→?)-β-D-glucopyranoside]:* [42862-20-4]
$C_{27}H_{30}O_{14}$ 578.526
Constit. of *Baptisia* sp. and *Sophora prostrata*.

7-O-*[α-L-Rhamnopyranosyl-(1→2)-β-D-galacturonopyranoside]:* [124167-97-1]
$C_{27}H_{28}O_{15}$ 592.509
Isol. from flowers of *Silybum marianum*.

7-O-*[α-L-Rhamnopyranosyl-(1→2)-β-D-glucuronopyranoside]:* [259255-29-3]
$C_{27}H_{28}O_{15}$ 592.509
Isol. from *Marchantia foliacea* and *Picria fel-terrae*. No phys. props. reported. λ_{max} 269; 334 (MeOH).

7-O-*[β-D-Allopyranosyl-(1→2)-β-D-glucopyranoside]:* [113471-88-8]
$C_{27}H_{30}O_{15}$ 594.525
Isol. from *Sideritis* sp.

7-O-*[6-O-Acetyl-β-D-allopyranosyl-(1→2)-β-D-glucopyranoside]:* [135626-72-1]
$C_{29}H_{32}O_{16}$ 636.562
Isol. from *Stachys aegyptiaca*. Tentative struct. λ_{max} 267; 330 (MeOH).

7-O-*[2,3-Di-O-acetyl-α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:* [682354-24-1]
$C_{31}H_{34}O_{16}$ 662.600
Constit. of the aerial parts of *Scoparia dulcis*. Yellow powder (MeOH). $[\alpha]_D^{27}$-50.2 (c, 0.2 in MeOH). λ_{max} 215 (log ϵ 4.15); 278 (log ϵ 3.45); 330 (log ϵ 4.2) (MeOH).

7-O-*[β-D-Galactopyranosyl-(1→4)-β-D-mannopyranoside]:* [84638-36-8]
$C_{27}H_{30}O_{15}$ 594.525
Isol. from seeds of *Daucus carota*. Cryst. (MeOH). Mp 268-270°.

7-O-*[β-D-Glucopyranosyl-(1→?)-α-L-rhamnopyranoside]:* [131405-89-5]
$C_{27}H_{30}O_{14}$ 578.526
Isol. from *Asplenium normale*.

7-O-*[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranoside]:* [52073-83-3]

Apigenin 7-sophoroside
$C_{27}H_{30}O_{15}$ 594.525
Constit. of *Lonicera gracilipes* var. *glandulosa*. Powder. Mp 267-268°. $[\alpha]_D^{23}$-56.6 (c, 0.1 in Me_2CO).

7-O-*[β-D-Glucopyranosyl-(1→4)-β-D-glucopyranoside]:* [211096-97-8] *Apigenin 7-cellobioside*
$C_{27}H_{30}O_{15}$ 594.525
Constit. of *Salvia uliginosa*. λ_{max} 266; 337 (MeOH).

7-O-*[β-D-Glucopyranosyl-(1→6)-β-D-glucopyranoside]:* [50826-94-3] *Apigenin 7-gentiobioside*
$C_{27}H_{30}O_{15}$ 594.525
Constit. of *Artemisia* sp., *Glandularia* sp., *Launaea* sp. and *Trachelospermum* spp. Needles (MeOH). Mp 258-260°. $[\alpha]_D$-31.8 (c, 1 in $CHCl_3$).

7-O-*[β-Glucopyranosyl-(1→?)-β-D-glucopyranoside]:* [28629-51-8] *Apigenin 7-diglucoside*†
$C_{27}H_{30}O_{15}$ 594.525
Isol. from *Colchicum autumnale*. Mp 236-238°.

7-O-*[β-D-Glucopyranosyl-(1→?)-β-D-glucopyranoside]:* [36906-66-8] *Apigenin 7-diglucoside*†
$C_{27}H_{30}O_{15}$ 594.525
Isol. from numerous plant spp.

7-O-*[β-D-Mannopyranosyl-(1→2)-β-D-allopyranoside]:* [956586-41-7]
$C_{27}H_{30}O_{15}$ 594.525
Constit. of the fruit of *Prunus armeniaca*. Yellow powder. Mp 162°. λ_{max} 272; 333 (MeOH).

7-O-*[β-D-Galacturonopyranosyl-(1→?)-β-D-glucopyranoside]:* [126254-76-0]
$C_{27}H_{28}O_{16}$ 608.509
Isol. from *Cuminum cyminum*.

7-O-*[β-D-Galacturonopyranosyl-(1→?)-β-D-galacturonopyranoside]:* [126254-75-9] *Apigenin 7-digalacturonoside*
$C_{27}H_{26}O_{17}$ 622.492
Isol. from seeds of *Cuminum cyminum*.

7-O-*[β-D-Glucuronopyranosyl-(1→2)-β-D-glucuronopyranoside]:* [119738-57-7] ***Clerodendrin***
[74696-01-8]
$C_{27}H_{26}O_{17}$ 622.492
Isol. from *Elodea canadensis*, *Clerodendron trichotomum*, *Perilla nankinensis* and *Perilla frutescens*. Co-pigment in blue *Veronica persica* flowers. Shows anitallergic activity. Pale yellow cryst. Mp 216° dec. $[\alpha]_D$-55.5 (c, 0.05 in MeOH).

7-O-*[3*-O-*Acetyl-β-D-glucuronopyranosyl-(1→2)-β-D-glucuronopyranoside]:* [931117-76-9]
$C_{29}H_{28}O_{18}$ 664.529
Constit. of *Lippia alba*.

7-O-*[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→4)]-β-D-glucopyranoside]:* [50450-44-7]
$C_{33}H_{40}O_{18}$ 724.668
Constit. of *Dicranum scoparium* and *Hylocomium splendens*.

7-O-*[α-L-Rhamnopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→6)]-β-D-glucopyranoside]:* [260413-62-5] ***Ligustroflavone***
$C_{33}H_{40}O_{18}$ 724.668
Constit. of *Ligustrum vulgare*. Brown amorph. powder. λ_{max} 268; 336 (MeOH).

7-O-*[α-L-Rhamnopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→6)]-β-D-glucopyranoside]:* [174284-20-9] *Apigenin 7-(2^G-rhamnosyl)gentiobioside*
$C_{33}H_{40}O_{19}$ 740.668
Constit. of *Lonicera gracilipes* var. *glandulosa*. Needles (MeOH). Mp 309-310°. $[\alpha]_D^{25}$-102 (c, 0.1 in Me_2CO aq.).

7-O-*[4-Hydroxy*-E-*cinnamoyl-(→6)-β-D-glucopyranosyl-(1→2)-α-L-rhamnopyranosyl-(1→3)-α-L-rhamnopyranoside]:* [884320-60-9] ***Brauhene floroside C***
$C_{42}H_{46}O_{20}$ 870.813
Constit. of the fruit of *Stocksia brauhica*. Yellowish gummy solid. $[\alpha]_D^{24}$-13 (c, 0.02 in MeOH). λ_{max} 193; 205; 268; 315 (MeOH).

7-O-*[β-D-Glucopyranosyl-(1→2)-β-D-glucopyranosyl-(1→2)-β-D-glucopyranoside]:* [205326-78-9] *Apigenin 7-sophorotrioside*
$C_{33}H_{40}O_{20}$ 756.667
Isol. from the moss *Leptostomum macrocarpon*.

7-O-*[β-D-Glucopyranosyl-(1→2)-[β-D-glucopyranosyl-(1→6)]-β-D-glucopyranoside]:* [1338235-83-8]
$C_{33}H_{40}O_{20}$ 756.667
Constit. of the leaves and roots of *Selaginella moellendorfi*. Yellow gum. $[\alpha]_D^{20}$-12 (c, 0.1 in MeOH). λ_{max} 210 (log ε 4.35); 260 (log ε 3.39); 280 (log ε 4.36) (MeOH).

7-O-*[β-D-Glucuronopyranosyl-(1→3)-[4-hydroxy-3-methoxy*-E-*cinnamoyl-(→2)]-β-D-glucuronopyranosyl-(1→2)-β-D-glucopyranoside]:* [935841-75-1]
$C_{43}H_{44}O_{25}$ 960.806
Constit. of *Medicago trunculata*. Amorph. yellow powder.

7-O-*[β-D-Glucuronopyranosyl-(1→3)-β-D-glucuronopyranosyl-(1→2)-β-D-glucuronopyranoside]:* [935841-77-3]
$C_{33}H_{34}O_{23}$ 798.618
Constit. of *Medicago trunculata*. Amorph. yellow powder. λ_{max} 265; 336 (MeOH).

7-O-*[4-Hydroxy*-E-*cinnamoyl-(→2)-[β-D-glucuronopyranosyl-(1→3)]-β-D-glucuronopyranosyl-(1→2)-β-D-glucuronopyranoside]:* [332422-34-1]
$C_{42}H_{40}O_{25}$ 944.763
Constit. of *Medicago sativa*. Amorph. yellow powder. Mp 203-204°. $[\alpha]_D^{20}$-61 (c, 0.1 in MeOH). λ_{max} 271; 323 (MeOH).

7-O-*[4-Hydroxy-3-methoxy*-E-*cinnamoyl-(→2)-[β-D-glucuronopyranosyl-(1→3)]-β-D-glucuronopyranosyl-(1→2)-β-D-glucuronopyranoside]:* [332422-33-0]
$C_{43}H_{42}O_{26}$ 974.789
Constit. of alfalfa, *Medicago sativa*. Amorph. yellow powder. Mp 210-211°. $[\alpha]_D^{20}$-50.8 (c, 0.1 in MeOH). λ_{max} 271; 323 (MeOH).

7-O-*[4-Hydroxy-3,5-dimethoxy*-E-*cinnamoyl-(→2)-β-D-glucuronopyranosyl-(1→2)-β-D-glucuronopyranoside]:* [935841-72-8]
$C_{38}H_{36}O_{21}$ 828.69
Constit. of *Medicago trunculata*. Amorph. yellow powder. λ_{max} 267; 334 (MeOH).

O-*Sulfate, 7*-O-*β-D-galactopyranoside:*
$C_{21}H_{20}O_{13}S$ 512.447
Isol. from *Tetracera stuhlmanniana*. No phys. props. reported.

4′-O-*(3,4-Dihydroxy*-E-*cinnamoyl), 7*-O-*[α-L-rhamnopyranosyl-(1→6)-β-D-glucopyranoside]:* [14637-28-6] ***Menthoside***
$C_{36}H_{36}O_{17}$ 740.67
Isol. from *Mentha piperita* leaves. Cryst. (EtOH). Mp 271-273°. $[\alpha]_D^{18}$-89 (c, 0.1 in DMF).

7-O-*[4-Hydroxy-3-methoxy*-E-*cinnamoyl-(→5)-β-D-apiofuranosyl-(1→2)-β-D-glucopyranoside]:* [1186059-40-4]
$C_{36}H_{36}O_{17}$ 740.670
Constit. of *Apium graveolens* (celery). Yellow powder (MeOH). $[\alpha]_D^{25}$-28.5 (c, 0.1 in EtOH). λ_{max} 267 (log ε 3.9); 334 (log ε 4.2) (MeOH).

7-O-*[β-D-Apiofuranosyl-(1→2)-β-D-apiofuranoside]:* [1217268-02-4]
$C_{25}H_{26}O_{13}$ 534.473
Constit. of the leaves of *Lantana trifolia*. Amorph. powder. $[\alpha]_D$-85.2 (c, 1 in MeOH). λ_{max} 270; 340 (MeOH).

7-O-*[β-D-Glucopyranosyl-(1→3)-β-D-glucopyranosyl-(1→3)-β-D-glucopyranoside]:* [1345995-44-9]
$C_{33}H_{40}O_{20}$ 756.667
Isol. from the whole plant of *Gentiana rhodantha*. Amorph. yellow powder. $[\alpha]_D^{18}$ +26 (c, 0.42 in MeOH). λ_{max} 206 (log ε 4.44); 271 (log ε 4.18); 327 (log ε 4.15) (MeOH).

7-O-*[β-D-Glucuronopyranosyl-(1→2)-[α-L-rhamnopyranosyl-(1→6)]-β-D-glucopyranoside]:* [1220269-53-3]
$C_{33}H_{38}O_{20}$ 754.651
Constit. of the leaves of *Robinia pseudoacacia*. λ_{max} 267; 337 (no solvent reported).

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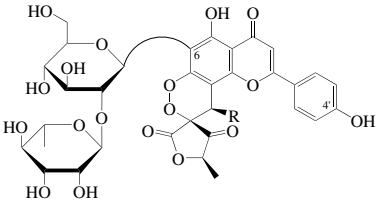
Apigenosylide A A-95

[1174167-29-3]



R = -$(CH_2)_9CH_3$
Relative Configuration

$C_{43}H_{54}O_{18}$ 858.889
Constit. of the leaves of *Machilus japonica* var. *kusanoi*. Yellow solid. $[\alpha]_D^{27}$ +60 (c, 0.2 in MeOH). λ_{max} 219 (log ϵ 4.47); 260 (log ϵ 4.35); 341 (log ϵ 4.25) (MeOH).

6-Deglycosyl, 4′-O-β-D-glucopyranoside: [1174167-31-7] ***Apigenosylide C***
$C_{37}H_{44}O_{14}$ 712.746
Constit. of the leaves of *Machilus japonica* var. *kusanoi*. Moderately potent α-glucosidase type IV inhibitor. Yellow solid. $[\alpha]_D^{27}$-25 (c, 0.2 in MeOH). λ_{max} 259 (log ϵ 4.14); 277 (log ϵ 4.37); 341 (log ϵ 4.47) (MeOH).

Lee, S.-S. *et al., J. Nat. Prod.*, 2009, **72**, 1249-1252 (*Apigenosylides A,C, struct, biosynth, α-glucosidase type IV inhibitor*)

Apigenosylide B A-96

[1174167-30-6]

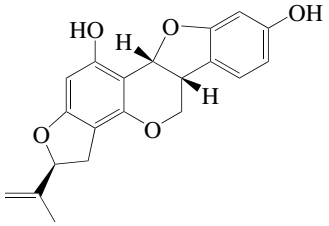
As Apigenosylide A, A-95 with
R = $(CH_2)_7CH_3$

$C_{41}H_{50}O_{18}$ 830.835
Constit. of the leaves of *Machilus japonica* var. *kusanoi*. Mod. potent α-glucosidase type IV inhibitor. Yellow solid. $[\alpha]_D^{27}$ +55 (c, 0.2 in MeOH). λ_{max} 216 (log ϵ 4.49); 261 (log ϵ 4.32); 341 (log ϵ 4.18) (MeOH).

Lee, S.-S. *et al., J. Nat. Prod.*, 2009, **72**, 1249-1252 (*isol, cd, pmr, cmr, ms*)

Apiocarpin A-97

*2,3,5*a,*10*a-*Tetrahydro-2-(1-methylethenyl)-5*H-*benzofuro[3,2-*c*]furo[2,3-*h*][1]benzopyran-8,11-diol,* CAS [83919-96-4]

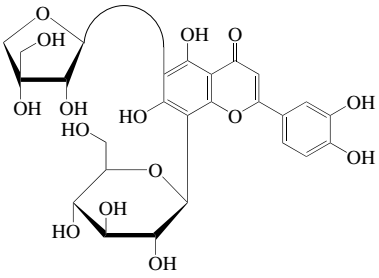


$C_{20}H_{18}O_5$ 338.359
Phytoalexin of *Apios tuberosa*. Sol. MeOH, Et_2O; poorly sol. H_2O, hexane. $[\alpha]_D$-180 (c, 0.15 in MeOH). λ_{max} 214; 286 (ϵ 6300) (EtOH) (Berdy). λ_{max} 212; 298 (EtOH/NaOH) (Berdy).

Ingham, J.L. *et al., Phytochemistry*, 1982, **21**, 1409-1413 (*Apiocarpin, struct*)

6-β-D-Apiofuranosyl-8-β-D-glucopyranosyl-3′,4′,5,7-tetrahydroxyflavone **A-98**

6-Apiosyl-8-glucosylluteolin [1345684-46-9]

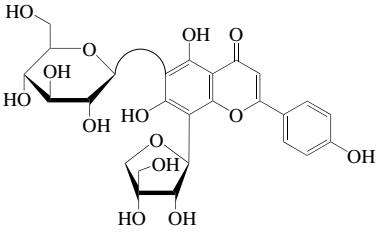


$C_{26}H_{28}O_{15}$ 580.498
Constit. of the stems of *Montanoa bipinnatifida*. Amorph. yellow powder. λ_{max} 256; 271; 348 (MeOH).

El-Toumy, S.A. *et al., J. Med. Plants Res.*, 2011, **5**, 1291-1296 (*Montanoa bipinnatifida constit*)

8-*C*-β-D-Apiofuranosyl-6-*C*-β-D-glucopyranosyl-4′,5,7-trihydroxyflavone **A-99**

8-C-β-D-Apiofuranosyl-6-C-β-D-glucopyranosylapigenin [628708-66-7]



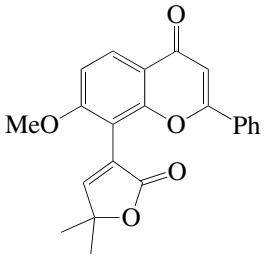
$C_{26}H_{28}O_{14}$ 564.499
Constit. of *Xanthosoma violaceum*, *Centaurea deflexa* and *Sechium edule*. Amorph. powder. Mp 198-202°. $[\alpha]_D^{20}$-60.5 (c, 0.4 in MeOH). λ_{max} 270 (log ε 4.3); 335 (log ε 4.42) (MeOH).

Picerno, P. *et al., J. Agric. Food Chem.*, 2003, **51**, 6423-6428 (*Xanthosoma violaceum constit, struct*)

Siciliano, T. *et al., J. Agric. Food Chem.*, 2004, **52**, 6510-6515 (*Sechium edule constit*)

Apollinin **A-100**

[75425-28-4]



$C_{22}H_{18}O_5$ 362.381
Constit. of *Tephrosia apollinea* and *Tephrosia purpurea*. Needles ($CHCl_3$/MeOH). Mp 274-276°. λ_{max} 244; 255; 312 (EtOH).

5-Methoxy: [182232-34-4] ***Hookerianin***
$C_{23}H_{20}O_6$ 392.407
Constit. of *Tephrosia hookeriana*. Cryst. ($CHCl_3$/MeOH). Mp 238-240°. λ_{max} 265; 317 (MeOH).

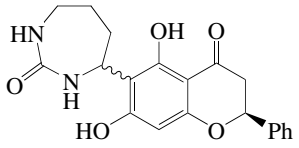
Waterman, P.G. *et al., Phytochemistry*, 1980, **19**, 909-915 (*Apollinin*)

Prabhakar, P. *et al., Phytochemistry*, 1996, **43**, 315-316 (*Hookerianin*)

Khalafalah, A.K. *et al., Pharmacogn. Res.*, 2010, **2**, 72-75 (*Apollinin*)

Aquiledine **A-101**

[321408-06-4]

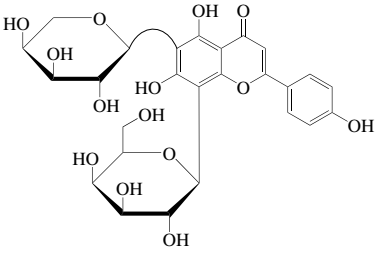


$C_{20}H_{20}N_2O_5$ 368.388
Constit. of *Aquilegia ecalcarata*. Amorph. powder (MeOH). Mp 214-215°. $[\alpha]_D$ +21 (c, 0.54 in MeOH). λ_{max} 288; 368 (sh) (MeOH).

Chen, S.-B. *et al., J. Nat. Prod.*, 2001, **64**, 85-87 (*Aquiledine*)

6-*C*-α-L-Arabinopyranosyl-8-*C*-β-D-galactopyranosyl-4′,5,7-trihydroxyflavone **A-102**

6-C-α-L-Arabinopyranosyl-8-C-β-D-galactopyranosyl-5,7-dihydroxy-2-(4-hydroxyphenyl)-4H-1-benzopyran-4-one, 9CI. *6-C-Arabinopyranosyl-8-C-galactopyranosylapigenin*†. *6-C-Arabinosyl-8-C-galactosylapigenin*. ***Corymboside*** [73543-87-0]



$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Carlina corymbosa* and *Macfadyena unguis-cati*. Yellow powder. $[\alpha]_D$ +79 (c, 0.67 in H_2O).

2‴-O-α-L-Rhamnopyranosyl: [1207204-48-5]
$C_{32}H_{38}O_{18}$ 710.641
Constit. of *Dendrobium huoshanense*. Amorph. solid. $[\alpha]_D^{20}$ +12 (c, 1 in MeOH). λ_{max} 209 (log ε 1.6); 270 (log ε 0.93); 334 (log ε 0.98) (MeOH).

O-(4-Hydroxy-3,5-dimethoxy-E-cinnamoyl): ***O‴-Sinapoylcorymboside***
$C_{37}H_{38}O_{18}$ 770.696
Constit. of *Triticum aestivum* seedlings. Cryst. (EtOH). Mp 205-207°. $[\alpha]_D^{26}$-136.8 (c, 0.1 in Py). Cinnamoyl substit. on galactosyl residue, position not determined. λ_{max} 237 (log ε 4.33); 330 (log ε 4.53) (no solvent reported).

Besson, E. *et al., Phytochemistry*, 1979, **18**, 1899-1900 (*Corymboside*)

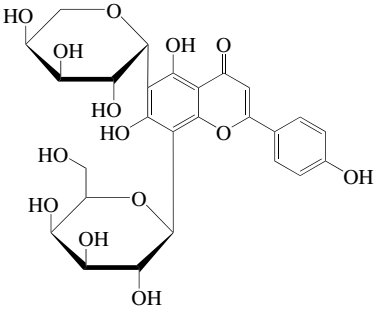
Wagner, H. *et al., J. Nat. Prod.*, 1980, **43**, 583-587 (*Triticum aestivum constit*)

Gaffield, W. *et al., Phytochemistry*, 1984, **23**, 1317-1322 (*Corymboside, cd*)

Chang, C.-C. *et al., J. Nat. Prod.*, 2010, **73**, 229-232 (*2‴-rhamnosyl*)

6-*C*-β-L-Arabinopyranosyl-8-*C*-β-D-galactopyranosyl-4′,5,7-trihydroxyflavone **A-103**

6-C-Arabinopyranosyl-8-C-galactopyranosylapigenin†. ***Neocorymboside*** [117065-26-6]
[959774-34-6]



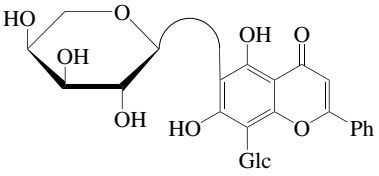
$C_{26}H_{28}O_{14}$ 564.499
Constit. of *Atractylis gummifera* and the seeds of fenugreek (*Trigonella foenum-graecum*). λ_{max} 270; 332 (MeOH).

Chaboud, A. *et al., Phytochemistry*, 1988, **27**, 2360-2361 (*Neocorymboside, struct*)

Rayyan, S. *et al., J. Agric. Food Chem.*, 2010, **58**, 7211-7217 (*Trigonella foenum-graecum constit*)

6-*C*-α-L-Arabinopyranosyl-8-*C*-β-D-glucopyranosyl-5,7-dihydroxyflavone **A-104**

6-C-α-L-Arabinopyranosyl-8-C-β-D-glucopyranosyl-5,7-dihydroxy-2-phenyl-4H-1-benzopyran-4-one, 9CI. *6-C-Arabinopyranosyl-8-C-glucopyranosylchrysin.* *6-C-Arabinosyl-8-C-glucosylchrysin* [81091-22-7]

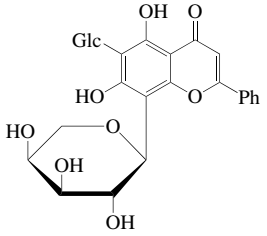


$C_{26}H_{28}O_{13}$ 548.499
Constit. of the roots of *Scutellaria baicalensis*. Yellow powder + $^{5/6}H_2O$. Mp 215-218°. $[\alpha]_D^{22}$-31.3 (c, 1 in MeOH aq.). λ_{max} 217 (log ε 4.47); 248 (log ε 4.15); 277 (log ε 4.37); 318 (log ε 3.82) (MeOH).

Takagi, S. *et al., Phytochemistry*, 1981, **20**, 2443-2444 (*Scutellaria baicalensis constit, struct*)

8-*C*-α-L-Arabinopyranosyl-6-*C*-β-D-glucopyranosyl-5,7-dihydroxyflavone A-105

8-C-α-L-*Arabinopyranosyl-6*-C-β-D-*glucopyranosyl-5,7-dihydroxy-2-phenyl-4*H-*1-benzopyran-4-one,* 9CI. *8*-C-*Arabinopyranosyl-6*-C-*glucopyranosylchrysin*. *8*-C-*Arabinosyl-6*-C-*glucosylchrysin* [81091-21-6]

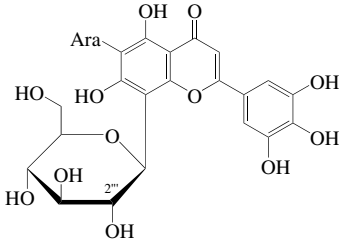


$C_{26}H_{28}O_{13}$ 548.499
Constit. of the roots of *Scutellaria baicalensis*. Pale yellow powder + $^{2}_{3}H_2O$. Mp 215-218°. $[\alpha]_D^{22}$ +96 (c, 1 in MeOH aq.). λ_{max} 216 (log ε 4.5); 249 (log ε 4.12); 275 (log ε 4.42); 316 (log ε 3.96) (MeOH).

Takagi, S. *et al., Phytochemistry*, 1981, **20**, 2443-2444 (*Scutellaria baicalensis constit, struct*)

6-*C*-α-L-Arabinopyranosyl-8-*C*-β-D-glucopyranosyl-3′,4′,5,5′,7-pentahydroxyflavone A-106

6-C-α-L-*Arabinopyranosyl-8*-C-β-D-*glucopyranosyl-5,7-dihydroxy-2-(3,4,5-trihydroxyphenyl)-4*H-*1-benzopyran-4-one,* 9CI. *6*-C-*Arabinopyranosyl-8*-C-*glucopyranosyltricetin*. *6*-C-*Arabinosyl-8*-C-*glucosyltricetin* [86022-78-8]



$C_{26}H_{28}O_{16}$ 596.498
Constit. of *Apometzgeria pubescens*, *Metzgeria furcata* and *Radula complanata*. λ_{max} 274; 356 (MeOH).

3′,5′-Di-Me ether: [80779-90-4] ***6-C-α-L-Arabinopyranosyl-8-C-β-D-glucopyranosyl-4′,5,7-trihydroxy-3′,5′-dimethoxyflavone***
$C_{28}H_{32}O_{16}$ 624.551
Constit. of *Apometzgeria pubescens* and *Metzgeria conjugata*.

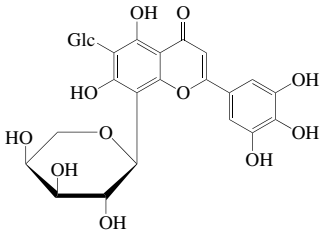
3′,5′-Di-Me ether, 2‴-O-β-D-glucopyranosyl: [1258390-52-1]
$C_{34}H_{42}O_{21}$ 786.693
Constit. of *Glycosmis mauritiana*. Yellow cryst. Mp 241-243°. λ_{max} 272; 333 (MeOH). λ_{max} 281; 401 (MeOH/NaOH).

[79504-23-7, 79519-74-7]

Theodor, R. *et al., Phytochemistry*, 1980, **19**, 1695-1700 (*6-C-Arabinosyl-8-C-glucosyltricetin*)
Theodor, R. *et al., Phytochemistry*, 1981, **20**, 1457-1458 (*Apometzgeria pubescens constit*)
Theodor, R. *et al., Phytochemistry*, 1981, **20**, 1851-1852 (*Metzgeria conjugata constit*)
Theodor, R. *et al., Z. Naturforsch., C*, 1983, **38**, 165-169 (*Metzgeria furcata constit*)
Schoeneborn, R. *et al., Phytochemistry*, 1993, **34**, 1143-1145 (*cmr*)
Intekhab, J. *et al., Monatsh. Chem.*, 2010, **141**, 1263-1265 (*Glycosmis mauritiana constit*)

8-*C*-α-L-Arabinopyranosyl-6-*C*-β-D-glucopyranosyl-3′,4′,5,5′,7-pentahydroxyflavone A-107

8-C-α-L-*Arabinopyranosyl-6*-C-β-D-*glucopyranosyl-5,7-dihydroxy-2-(3,4,5-trihydroxyphenyl)-4*H-*1-benzopyran-4-one,* 9CI. *8*-C-*Arabinopyranosyl-6*-C-*glucopyranosyltricetin*. *8*-C-*Arabinosyl-6*-C-*glucosyltricetin* [71815-37-7]



$C_{26}H_{28}O_{16}$ 596.498
Isol. from *Metzgeria furcata*, *Radula complanata* and *Takakia* sp.

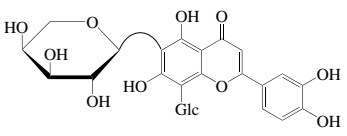
3′,5′-Di-Me ether: [80738-69-8] *8*-C-α-L-*Arabinopyranosyl-6*-C-β-D-*glucopyranosyl-4′,5,7-trihydroxy-3′,5′-dimethoxyflavone*
$C_{28}H_{32}O_{16}$ 624.551
Isol. from *Apometzgeria pubescens* and *Metzgeria conjugata*.

[79504-26-0]

Markham, K.R. *et al., Phytochemistry*, 1979, **18**, 611-615 (*Takakia constit*)
Theodor, R. *et al., Phytochemistry*, 1981, **20**, 1457-1458 (*Apometzgeria pubescens constit*)
Theodor, R. *et al., Phytochemistry*, 1981, **20**, 1851-1852 (*Metzgeria conjugata constit*)
Theodor, R. *et al., Z. Naturforsch., C*, 1983, **38**, 165-169 (*Metzgeria furcata constit*)
Markham, K.R. *et al., Z. Naturforsch., C*, 1984, **39**, 309-310 (*Radula complanata constit*)

6-*C*-α-L-Arabinopyranosyl-8-*C*-β-D-glucopyranosyl-3′,4′,5,7-tetrahydroxyflavone A-108

6-C-α-L-*Arabinopyranosyl-2-(3,4-dihydroxyphenyl)-8*-C-β-D-*glucopyranosyl-5,7-dihydroxy-4*H-*1-benzopyran-4-one,* 9CI. *6*-C-*Arabinopyranosyl-8*-C-*glucopyranosylluteolin*. *6*-C-*Arabinosyl-8*-C-*glucosylluteolin*. ***Isocarlinoside*** [83151-90-0]



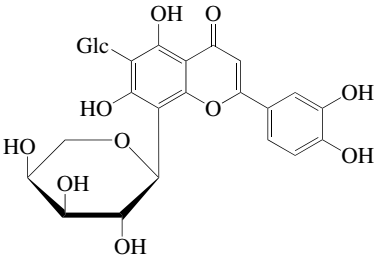
$C_{26}H_{28}O_{15}$ 580.498
Constit. of *Lespedeza capitata*, *Viola yedoensis*, *Blepharostoma trichophyllum* and *Glycine max*. λ_{max} 271; 350 (MeOH).

3′-Me ether: [87245-43-0] ***6-C-α-L-Arabinopyranosyl-8C-β-D-glucopyranosyl-4′,5,7-trihydroxy-3′-methoxyflavone***
$C_{27}H_{30}O_{15}$ 594.525
Constit. of stems of *Trichophorum cespitosum*. Probable struct.

Linard, A. *et al., Phytochemistry*, 1982, **21**, 797-799 (*Lespedeza capitata constit*)
Salmenkallio, S.S. *et al., Phytochemistry*, 1982, **21**, 2990-2991 (*Trichophorum cespitosum constit*)
Jay, M. *et al., Phytochemistry*, 1984, **23**, 1153-1155 (*Glycine max constit*)
Xie, C. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1204-1207 (*Viola yedoensis constit*)

8-*C*-α-L-Arabinopyranosyl-6-*C*-β-D-glucopyranosyl-3′,4′,5,7-tetrahydroxyflavone A-109

8-C-α-L-*Arabinopyranosyl-2-(3,4-dihydroxyphenyl)-6*-C-β-D-*glucopyranosyl-5,7-dihydroxy-4*H-*1-benzopyran-4-one,* 9CI. *8*-C-*Arabinopyranosyl-6*-C-*glucopyranosylluteolin*†. *8*-C-*Arabinosyl-6*-C-*glucosylluteolin*†. ***Carlinoside***. *Lucenin 5* [59952-97-5]



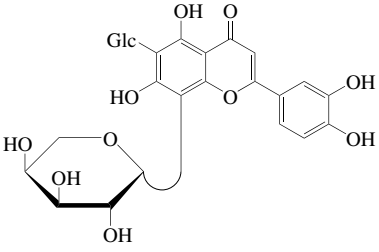
$C_{26}H_{28}O_{15}$ 580.498
Constit. of *Carlina vulgaris*, *Vitex lucens*, *Lespedeza capitata*, *Oryza sativa*, *Glycine max* and other plant spp. See also 8-*C*-β-L-Arabinopyranosyl-6-*C*-β-D-glucopyranosyl-3′,4′,5,7-tetrahydroxyflavone, A-110. λ_{max} 259; 270; 350 (MeOH).

3′-Me ether: [87261-15-2] ***8-C-α-L-Arabinosyl-6-C-β-D-glucopyranosyl-4′,5,7-trihydroxy-3′-methoxyflavone***
$C_{27}H_{30}O_{15}$ 594.525
Constit. of stems of *Trichophorum cespitosum*. Probable struct.

Seikel, M.K. *et al., Phytochemistry*, 1966, **5**, 439-455 (*Vitex lucens constit*)
Raynaud, J. *et al., C. R. Seances Acad. Sci., Ser. D*, 1976, **282**, 1059-1061 (*Carlina vulgaris constit*)
Linard, A. *et al., Phytochemistry*, 1982, **21**, 797-799 (*Lespedeza capitata constit*)
Salmenkallio, M. *et al., Phytochemistry*, 1982, **21**, 2990-2991 (*Trichophorum cespitosum constit*)
Jay, M. *et al., Phytochemistry*, 1984, **23**, 1153-1156 (*Glycine max constit*)
Besson, E. *et al., Phytochemistry*, 1985, **24**, 1061-1064 (*Oryza sativa constit*)

8-*C*-β-L-Arabinopyranosyl-6-*C*-β-D-glucopyranosyl-3′,4′,5,7-tetrahydroxyflavone A-110

8-C-*β*-*L*-*Arabinopyranosyl-2-(3,4-dihydroxyphenyl)-6*-C-*β*-*D*-*glucopyranosyl-5,7-dihydroxy-4*H-*1-benzopyran-4-one,* 9CI. *8*-C-*Arabinopyranosyl-6*-C-*glucopyranosylluteolin*†. *8*-C-*Arabinosyl-6*-C-*glucosylluteolin*†. *Neocarlinoside* [83151-89-7]



$C_{26}H_{28}O_{15}$ 580.498

Isol. from *Lespedeza capitata*, *Oryza sativa*, *Radula complanata* and *Saccharum* sp. Also see 8-*C*-α-L-Arabinopyranosyl-6-*C*-β-D-glucopyranosyl-3′,4′,5,7-tetrahydroxyflavone, A-109. λ_{max} 270; 348 (H_2O).

Linard, A. *et al., Phytochemistry*, 1982, **21**, 797-799 (*Lespedeza capitata constit*)

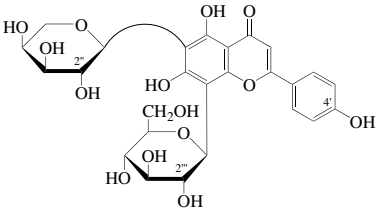
Besson, E. *et al., Phytochemistry*, 1985, **24**, 1061-1064 (*Oryza sativa constit*)

Ulubelen, A. *et al., Rev. Latinoam. Quim.*, 1985, **16**, 63-64 (*Saccharum constit*)

Ferreres, F. *et al., Rapid Commun. Mass Spectrom.*, 2011, **25**, 700-712 (*lc-ms*)

6-*C*-α-L-Arabinopyranosyl-8-*C*-β-D-glucopyranosyl-4′,5,7-trihydroxyflavone A-111

6-C-*α*-*L*-*Arabinopyranosyl-8*-C-*β*-*D*-*glucopyranosyl-5,7-dihydroxy-2-(4-hydroxyphenyl)-4*H-*1-benzopyran-4-one,* 9CI. *6*-C-*Arabinosylvitexin*. *6*-C-*Arabinosyl-8*-C-*glucosylapigenin*. ***Isoschaftoside***† [52012-29-0]



$C_{26}H_{28}O_{14}$ 564.499

Isol. from *Desmodium uncinatum*, *Flourensia cernua*, *Catananche caerulea* and many other plants. Constit. of the pips of *Cydonia oblonga* and from green tea. Allelochemical. Shows hepatoprotective activity and nematocidal activity against *Meloidogyne incognita*. Yellow cryst. (MeOH). Mp *ca.* 220° dec.

4′-O-*β*-*D*-*Glucopyranoside:* [151922-19-9] *Isoschaftoside 4′-glucoside*
$C_{32}H_{38}O_{19}$ 726.641
Constit. of *Ceratonia siliqua*.

2‴-O-*α*-*L*-*Rhamnopyranosyl:* [1207204-46-3]
$C_{32}H_{38}O_{18}$ 710.641
Constit. of *Dendrobium huoshanense.* Amorph. solid. $[\alpha]_D^{20}$ +12 (c, 0.1 in MeOH). λ_{max} 220 (log ϵ 2.7); 270 (log ϵ 2.38); 331 (log ϵ 2.7) (MeOH).

2‴-O-*(4-Hydroxy-3-methoxycinnamoyl):* [80754-94-5] ***2‴*-O-*Ferulylisoschaftoside***
$C_{36}H_{36}O_{17}$ 740.67
Constit. of *Metzgeria conjugata* and *Metzgeria furcata*.

2″-O-*(4-Hydroxy-3,5-dimethoxy*-E-*cinnamoyl):* [1004323-46-9] ***Triticuside B***
$C_{37}H_{38}O_{18}$ 770.696
Constit. of *Triticum aestivum*. Isol. as a mixt. with Triticuside A in A-113. Sugar configs. uncertain.

Biol, M.C. *et al., C. R. Seances Acad. Sci., Ser. C*, 1974, **279**, 409-411 (*6-Arabinosylvitexin, synth*)

Gaffield, W. *et al., Tetrahedron*, 1978, **34**, 3089-3096 (*cd*)

Theodor, R. *et al., Phytochemistry*, 1981, **20**, 1851-1852 (*2-Ferulylisoschaftoside*)

Batista, M.T. *et al., Phytochemistry*, 1993, **34**, 1191-1193 (*4′-glucoside*)

Wada, S. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 2262-2265 (*green tea constit, struct, hepatoprotective activity*)

Xie, C. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1204-1207 (*Isoschaftoside, struct*)

Silva, B.M. *et al., J. Agric. Food Chem.*, 2004, **52**, 4705-4712 (*Cydonia oblonga constit*)

Feng, X. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2008, **44**, 171-173 (*Triticuside B*)

Chang, C.-C. *et al., J. Nat. Prod.*, 2010, **73**, 229-232 (*2‴-rhamnosyl*)

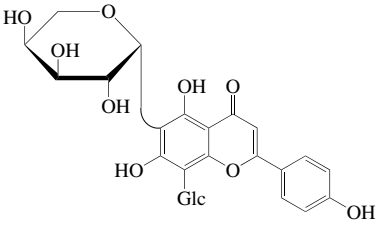
Hooper, A.M. *et al., Phytochemistry*, 2010, **71**, 904-908 (*Desmodium uncinatum constit, allelopathic activity*)

Du, S.-S. *et al., Molecules*, 2011, **16**, 5079-5086 (*Isoschaftoside, nematocidal activity*)

Hamilton, M.L. *et al., Phytochemistry*, 2012, **84**, 169-176 (*Isoschaftoside, biosynth*)

6-*C*-β-L-Arabinopyranosyl-8-*C*-β-D-glucopyranosyl-4′,5,7-trihydroxyflavone A-112

6-C-*β*-*L*-*Arabinopyranosyl-8*-C-*β*-*D*-*glucopyranosyl-5,7-dihydroxy-2-(4-hydroxyphenyl)-4*H-*1-benzopyran-4-one,* 9CI. ***Neoisoschaftoside*** [71976-87-9]



$C_{26}H_{28}O_{14}$ 564.499

Isol. from *Crataegus* spp., *Gemmingia chinensis*, *Mnium undulatum* and other plant spp. $[\alpha]_D^{24}$-11 (c, 0.62 in H_2O).

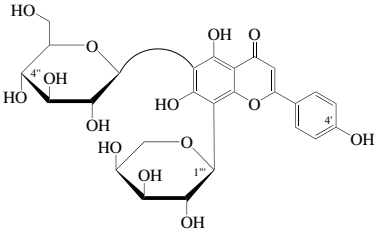
Osterdahl, B.G. *et al., Acta Chem. Scand., Ser. B*, 1979, **33**, 400-404 (*Mnium undulatum constit, struct*)

Shirane, S. *et al., Agric. Biol. Chem.*, 1982, **46**, 2595-2597 (*Gemmingia chinensis constit*)

Gaffield, W. *et al., Phytochemistry*, 1984, **23**, 1317-1322 (*Neoisoschafdtoside, cd, abs config*)

8-*C*-α-L-Arabinopyranosyl-6-*C*-β-D-glucopyranosyl-4′,5,7-trihydroxyflavone A-113

8-C-*α*-*L*-*Arabinopyranosyl-6*-C-*β*-*D*-*glucopyranosylapigenin*. ***Schaftoside*** [51938-32-0]



$C_{26}H_{28}O_{14}$ 564.499

Constit. of *Silene schafta* and seeds from *Cydonia oblonga*. Also present in many other plants. Inhibits LPS-induced mouse lung inflammation. Shows nematocidal activity against *Meloidogyne incognita*. Yellow needles. Mp 226°. $[\alpha]_D^{23}$ + 63.7 (Py). Incorrectly descr. as a mono-*O*-glycoside in the English summary of the Chopin paper.

4′-O-*β*-*D*-*Glucopyranoside:* [151922-20-2] *Schaftoside 4′-glucoside*
$C_{32}H_{38}O_{19}$ 726.641
Constit. of *Ceratonia siliqua*.

2″-O-*α*-*L*-*Rhamnopyranosyl:* [1207204-49-6]
$C_{32}H_{38}O_{18}$ 710.641
Constit. of *Dendrobium huoshanense.* Amorph. solid. $[\alpha]_D^{20}$ +96 (c, 1 in MeOH). λ_{max} 220 (log ϵ 2.7); 270 (log ϵ 2.1); 334 (log ϵ 2.51) (MeOH).

6″-O-*β*-*D*-*Glucopyranosyl:* [94530-41-3] *8*-C-*α*-*L*-*Arabinosyl-6*-C-*β*-*D*-*gentiobiosylapigenin*
$C_{32}H_{38}O_{19}$ 726.641
Isol. from *Stellaria holostea*.

2‴-O-*(4-Hydroxy-3,5-dimethoxy*-E-*cinnamoyl):* [1004323-45-8] ***Triticuside A***
$C_{37}H_{38}O_{18}$ 770.696
Constit. of *Triticum aestivum*. Isol. as a mixt. with Triticuside B in A-111. Sugar configs. uncertain.

7-Me ether: [101843-08-7] *8*-C-*Arabinosyl-6*-C-*glucosylgenkwanin*
$C_{27}H_{30}O_{14}$ 578.526
Constit. of *Almeidea guyanensis.* Needles (MeOH). Mp 253° dec. Config. of glycosyls not determined. λ_{max} 272; 333 (MeOH). λ_{max} 252; 269; 394 (MeOH/NaOH).

1‴-Epimer: [61328-41-4] *8*-C-*β*-*L*-*Arabinopyranosyl-6*-C-*β*-*D*-*glucopyranosylapigenin*. ***Neoschaftoside***
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Flourensia cernua*, *Crataegus* spp. and *Radula complanata*.

4″-Epimer: [83856-66-0] *8*-C-*α*-*L*-*Arabinopyranosyl-6*-C-*β*-*D*-*galactopyranosylapigenin*. ***Isocorymboside***
[65634-13-1]
Isol. from *Polygonum multiflorum* and *Cerastium arvense.* Yellow needles (H_2O). Mp 219-222°. $[\alpha]_D$ +109 (c, 2 in DMSO aq.).

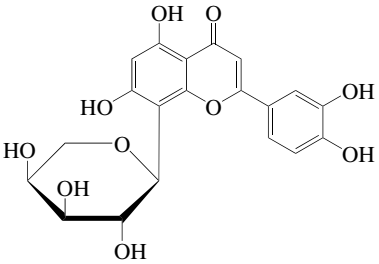
1‴,4‴-Diepimer: [207461-10-7] *6*-C-*β*-D-*Glucopyranosyl-8*-C-*β*-D-*ribopyranosylapigenin*
$C_{26}H_{28}O_{14}$ 564.499
Constit. of *Passiflora incarnata*.

2‴,3‴,4‴-Triepimer: [59914-91-9] *6*-C-*β*-D-*Glucopyranosyl-8*-C-*β*-D-*xylopyranosylapigenin*. ***Vicenin 3***
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Vitex lucens* and other plants. Inhibitor of LPS-induced NO prodn. Amorph. Yellow powder. Mp > 250°. $[\alpha]_D^{20}$ +26.8 (c, 0.6 in MeOH).

Bouillant, M.L. *et al., C. R. Seances Acad. Sci., Ser. C*, 1971, **273**, 1759-1762 (*Vicenin 3*)
Chopin, M.J. *et al., Phytochemistry*, 1974, **13**, 2583-2586 (*Schaftoside, struct*)
Dillon, M.O. *et al., Phytochemistry*, 1976, **15**, 1085-1086 (*Neoschaftoside*)
Chopin, J. *et al., Phytochemistry*, 1977, **16**, 1999-2001 (*Isocorymboside, cd, struct*)
Dubois, M.A. *et al., Planta Med.*, 1982, **46**, 56-57 (*Corymboside*)
Besson, E. *et al., Phytochemistry*, 1984, **23**, 159-161 (*Neoschaftoside, struct*)
Gaffield, W. *et al., Phytochemistry*, 1984, **23**, 1317-1322 (*Schaftoside, Neoschaftoside, cd, conformn*)
Bouillant, M.L. *et al., Phytochemistry*, 1984, **23**, 2653-2657 (*8-C-Arabinosyl-6-C-gentiobiosylapigenin*)
Wirasutisna, K.R. *et al., Phytochemistry*, 1986, **25**, 558-559 (*8-C-Arabinosyl-6-C-glucosylgenkwanin*)
Batista, M.T. *et al., Phytochemistry*, 1993, **34**, 1191-1193 (*Schaftoside 4′-glucoside*)
Chimichi, S. *et al., Nat. Prod. Lett.*, 1998, **11**, 225-232 (*1‴,4‴-diepimer*)
Xie, C. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1204-1207 (*Schaftoside, Neoschaftoside, pmr, cmr*)
Silva, B.M. *et al., J. Agric. Food Chem.*, 2004, **52**, 4705-4712 (*Cydonia oblonga constit*)
Melo, G.O. *et al., Planta Med.*, 2005, **71**, 362-363 (*Schaftoside, antiinflammatory activity*)
Feng, X. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2008, **44**, 171-173 (*Triticuside A*)
Sato, S. *et al., Carbohydr. Res.*, 2010, **345**, 1825-1830 (*Vicenin 3, synth*)
Chang, C.-C. *et al., J. Nat. Prod.*, 2010, **73**, 229-232 (*2″-rhamnosyl*)
Shie, J.-J. *et al., Org. Biomol. Chem.*, 2010, **8**, 4451-4462 (*Vicenin 3, synth, NO production inhibitor*)
Du, S.-S. *et al., Molecules*, 2011, **16**, 5079-5086 (*Schaftoside, nematocidal activity*)

8-*C*-Arabinopyranosyl-3′,4′,5,7-tetrahydroxyflavone A-114

8-C-*Arabinosylluteolin*



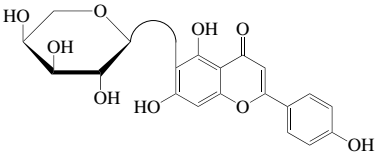
$C_{20}H_{18}O_{10}$ 418.356

α-L-*form* [115636-75-4]
Constit. of the leaves of *Mucuna sempervirens*. Yellow needles (H_2O). Mp 213-214°. λ_{max} 257; 269; 293 (sh); 350 (MeOH).

Ishikura, N. *et al., Phytochemistry*, 1988, **27**, 1555-1556 (*8-C-Arabinosylluteolin, struct*)

6-*C*-α-L-Arabinopyranosyl-4′,5,7-trihydroxyflavone A-115

6-C-*α*-L-*Arabinopyranosyl-5,7-dihydroxy-2-(4-hydroxyphenyl)-4*H-*1-benzopyran-4-one*. *6*-C-*Arabinopyranosylapigenin*. *6*-C-*Arabinosylapigenin*. ***Isomollupentin*** [38642-54-5]



$C_{20}H_{18}O_9$ 402.357
Isol. from *Cerastium arvense*, *Passiflora platyloba* and *Spergularia rubra*. Yellow cryst. (MeOH aq.). Mp 188-189°.

4′-O-*β*-D-*Glucopyranoside:* [97641-05-9]
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Cerastium arvense*.

7-O-*β*-D-*Glucopyranoside:* [97673-60-4]
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Cerastium arvense*.

7-O-*[α*-L-*Rhamnopyranosyl-(1→?)-β*-D-*glucopyranoside]:* [83133-85-1]
$C_{32}H_{38}O_{18}$ 710.641
Isol. from *Passiflora platyloba*.

2″-O-*α*-L-*Arabinopyranosyl, 7*-O-*β*-D-*glucopyranoside:* [89648-71-5]
$C_{31}H_{36}O_{18}$ 696.615
Isol. from *Cerastium arvense*.

2″-O-*β*-D-*Xylopyranosyl, 7*-O-*β*-D-*glucopyranoside:* [89708-28-1]
$C_{31}H_{36}O_{18}$ 696.615
Isol. from *Cerastium arvense*.

2″-O-*β*-D-*Glucopyranosyl:* [97641-06-0]
$C_{26}H_{28}O_{14}$ 564.499
Isol. from *Cerastium arvense*.

2″-O-*β*-D-*Glucopyranosyl, 7*-O-*β*-D-*glucopyranoside:* [72277-61-3]
$C_{32}H_{38}O_{19}$ 726.641
Isol. from *Cerastium arvense* and *Spergularia rubra*.

4″-O-*α*-L-*Rhamnopyranosyl:* [466645-85-2] ***Hemsleyanoside***
$C_{26}H_{28}O_{13}$ 548.499
Constit. of *Tetrastigma hemsleyanum*. Yellow powder. Mp 218-220°. $[\alpha]_D^{20}$ +9 (c, 0.02 in MeOH). λ_{max} 270; 336 (MeOH).

7-Me ether: [92633-64-2] *6*-C-*α*-L-*Arabinopyranosyl-4′,5-dihydroxy-7-methoxyflavone*. *6*-C-*Arabinosylgenkwanin*. *Isomolludistin*
$C_{21}H_{20}O_9$ 416.384
No phys. props. reported.

7-Me ether, 2″-O-*β*-D-*glucopyranosyl:* [70521-83-4]
$C_{27}H_{30}O_{14}$ 578.526
Isol. from *Almeidea guyanensis* and *Asterostigma riedelianum*.

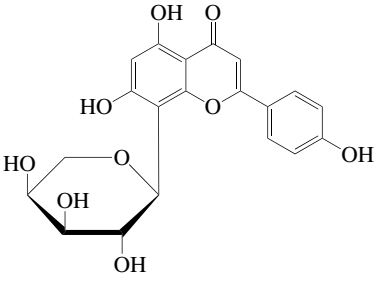
4′,7-Di-Me ether, 2″-O-*β*-D-*glucopyranosyl:* [77390-44-4]
$C_{28}H_{32}O_{14}$ 592.552
Isol. from *Asterostigma riedelianum*.

4′,7-Di-Me ether, 2″-O-*[3,4-dihydroxycinnamoyl-(→?)-β*-D-*glucopyranosyl]:*
$C_{37}H_{38}O_{17}$ 754.697
Isol. from *Asterostigma riedelianum*.

Chopin, J. *et al., C. R. Seances Acad. Sci., Ser. C*, 1972, **274**, 1840-1842 (*6-C-Arabinosylapigenin, synth*)
Gaffield, W. *et al., Tetrahedron*, 1978, **34**, 3089-3096 (*cd*)
Jay, M. *et al., Phytochemistry*, 1979, **18**, 184-185 (*Isomolludistin, struct*)
Bouillant, M.L. *et al., Phytochemistry*, 1979, **18**, 1043-1047 (*Spergularia rubra constit, struct*)
Markham, K.R. *et al., Phytochemistry*, 1980, **19**, 2789-2791 (*Asterostigma riedelianum constit, struct*)
Ayanoglu, E. *et al., Phytochemistry*, 1982, **21**, 799-801 (*7-rhamnosylglucoside, struct*)
Dubois, M.-A. *et al., Phytochemistry*, 1983, **22**, 2879-2880 (*2″-arabinosyl 7-glucoside, 2″-xylosyl 7-glucoside, struct*)
Dubois, M.-A. *et al., Phytochemistry*, 1985, **24**, 1077-1080 (*7-glucoside, 4′-glucoside, 2″-glucosyl, struct*)
Liu, D. *et al., Acta Bot. Sin.*, 2002, **44**, 227-229 (*Hemsleyanoside*)

8-*C*-α-L-Arabinopyranosyl-4′,5,7-trihydroxyflavone A-116

8-C-*α*-L-*Arabinopyranosyl-5,7-dihydroxy-2-(4-hydroxyphenyl)-4*H-*1-benzopyran-4-one*. *8*-C-*Arabinopyranosylapigenin*. *8*-C-*Arabinosylapigenin*. ***Mollupentin*** [38642-55-6]



$C_{20}H_{18}O_9$ 402.357
Isol. from *Mollugo pentaphylla*. Cryst. (MeOH aq.). Mp 215-216°.

2″-O-*α*-L-*Rhamnopyranosyl:* [146177-28-8]
$C_{26}H_{28}O_{13}$ 548.499
Constit. of *Allophylus edulis*. Shows antihepatotoxic activity.

4″-O-*α*-L-*Rhamnopyranosyl:* [466645-91-0] ***Isohemsleyanoside***
$C_{26}H_{28}O_{13}$ 548.499
Constit. of *Tetrastigma hemsleyana*. Yellow powder. Mp 216-218°. $[\alpha]_D^{20}$ + 8.8 (c, 0.02 in MeOH). λ_{max} 272; 335 (MeOH).

7-Me ether: [66274-25-7] *8*-C-*α*-L-*Arabinopyranosyl-4′,5-dihydroxy-7-methoxyflavone*. *8*-C-*Arabinosylgenkwanin*. ***Molludistin***
$C_{21}H_{20}O_9$ 416.384
Isol. from *Ocimum sanctum* and *Mollugo distica*. Mp 260-261°.

7-Me ether, 2″-O-D-*xylosyl:* [101843-07-6]
$C_{26}H_{28}O_{13}$ 548.499
Isol. from *Almeidea guyanensis*.

7-Me ether, 2″-O-*α*-L-*rhamnopyranosyl:* [66274-23-5] *2″-Rhamnosylmolludistin*
$C_{27}H_{30}O_{13}$ 562.526

Isol. from *Mollugo distica*, *Gnetum africanum* and *Avenasativa*.

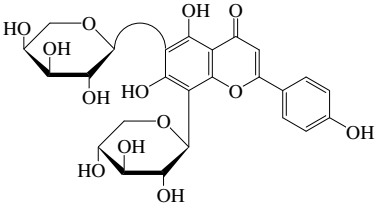
7-Me ether, 2″-O-*β-D-glucopyranosyl:* [70521-82-3]
$C_{27}H_{30}O_{14}$ 578.526
Isol. from *Almeidea guyanensis.*

[62459-25-0]

Chopin, J. *et al., C. R. Seances Acad. Sci., Ser. C*, 1972, **274**, 1840-1842 (*8-C-arabinosylapigenin, synth*)
Chopin, J. *et al., Phytochemistry*, 1978, **17**, 299-300 (*Mollugo distica constits, struct*)
Jay, M. *et al., Phytochemistry*, 1979, **18**, 184-185 (*2″-glucosyl, struct*)
Chopin, J. *et al., Phytochemistry*, 1979, **18**, 2059-2060 (*Mollupentin, struct*)
Nair, A.G.R. *et al., Indian J. Chem., Sect. B*, 1982, **21**, 979-980 (*Ocimum sanctum constit*)
Wirasutisna, K.R. *et al., Phytochemistry*, 1986, **25**, 558-559 (*2″-xylosyl, struct*)
Hoffmann-Bohm, K. *et al., Planta Med.*, 1992, **58**, 544-548 (*2″-rhamnosyl, struct, antihepatoxic activity*)
Liu, D. *et al., Acta Bot. Sin.*, 2002, **44**, 227-229 (*Isohemsleyanoside*)

6-*C*-α-L-Arabinopyranosyl-4′,5,7-trihydroxy-8-*C*-α-D-xylopyranosylflavone A-117

6-C-*α-L-Arabinopyranosyl-5,7-dihydroxy-2-(4-hydroxyphenyl)-8*-C-*β-D-xylopyranosyl-4*H*-1-benzopyran-4-one. 6*-C-*α-L-Arabinosyl-8*-C-*β-D-xylosylapigenin* [677021-30-6]

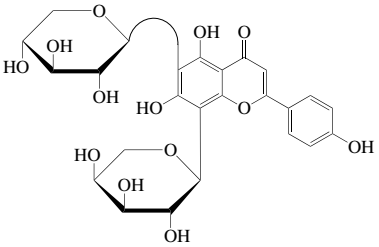


$C_{25}H_{26}O_{13}$ 534.473
Constit. of *Mollugo pentaphylla* and *Viola yedoensis*. Yellow prisms. Mp > 250° dec. $[\alpha]_D^{19}$-2.0 (c, 2.8 in H_2O).

Chopin, J. *et al., Phytochemistry*, 1982, **21**, 2367-2369 (*isol*)
Xie, C. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1204-1207 (*isol, pmr, cmr*)
Shie, J.-J. *et al., Org. Biomol. Chem.*, 2010, **8**, 4451-4462 (*synth, pmr, cmr*)

8-*C*-α-L-Arabinopyranosyl-4′,5,7-trihydroxy-6-*C*-β-D-xylopyranosylflavone A-118

8-C-*α-L-Arabinopyranosyl-5,7-dihydroxy-2-(4-hydroxyphenyl)-6*-C-*β-D-xylopyranosyl-4*H*-1-benzopyran-4-one. 8*-C-*Arabinopyranosyl-6*-C-*xylopyranosylapigenin. 8-Arabinosyl-6-xylosylapigenin* [85700-46-5]

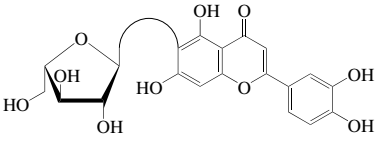


$C_{25}H_{26}O_{13}$ 534.473
Constit. of *Lespedeza cuneata*, *Mollugo pentaphylla* and *Viola yedoensis*. Insect larva feeding stimulant. Cryst. (MeOH aq.). Mp 235-238° dec. $[\alpha]_D^{25}$ +48.3 (c, 0.5 in MeOH).

Numata, A. *et al., Chem. Pharm. Bull.*, 1979, **27**, 602-608 (*Lespedeza cuneata constit, feeding stimulant*)
Chopin, J. *et al., Phytochemistry*, 1982, **21**, 2367-2369 (*Mollugo pentaphylla constit, struct, cd*)
Xie, C. *et al., Chem. Pharm. Bull.*, 2003, **51**, 1204-1207 (*Viola yedoensis constit*)
Shie, J.-J. *et al., Org. Biomol. Chem.*, 2010, **8**, 4451-4462 (*synth*)

6-*C*-Arabinosyl-3′,4′,5,7-tetrahydroxyflavone A-119

6-C-*Arabinosylluteolin*



α-L-*Furanose-form*

$C_{20}H_{18}O_{10}$ 418.356

α-L-Furanose-*form*

2″-O-*β-D-Xylopyranosyl:* [1023755-11-4] ***Kirilensin B***
$C_{25}H_{26}O_{14}$ 550.472
Constit. of the leaves of *Sasa kurilensis* var. *gigantea*. Antioxidant. Amorph. yellow powder. $[\alpha]_D$-28.1 (c, 0.11 in MeOH). λ_{max} 292 (log ε 3.5); 349 (log ε 3.8) (MeOH).

2″-O-*α-L-Rhamnopyranosyl:* [1023755-10-3] ***Kurilensin A***
$C_{26}H_{28}O_{14}$ 564.499
Constit. of the leaves of *Sasa kurilensis* var. *gigantea*. Antioxidant. Amorph. yellow powder. $[\alpha]_D$-34 (c, 0.13 in MeOH). λ_{max} 292 (log ε 3.5); 350 (log ε 3.9) (MeOH).

α-L-Pyranose-*form*

Constit. of *Muhlenbergia* sp.

2″-O-*α-L-Rhamnopyranosyl:* [1257984-63-6]
$C_{26}H_{28}O_{14}$ 564.499
Constit. of *Petrorhagia velutina*. $[\alpha]_D^{20}$ + 4 (c, 0.69 in MeOH). λ_{max} 270 (log ε 3.78); 350 (log ε 3.84) (MeOH).

Herrara, Y. *et al., Biochem. Syst. Ecol.*, 1991, **19**, 665-672 (*Muhlenbergia constit*)
Hasegawa, T. *et al., Phytochemistry*, 2008, **69**, 1419-1424 (*Kirilensins A,B*)
Pacifico, S. *et al., J. Nat. Prod.*, 2010, **73**, 1973-1978 (*Petrorhagia velutina constit*)

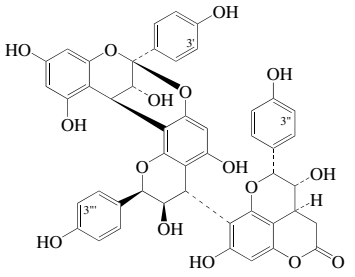
Arachidoside A-120

Struct. unknown. Flavonoid glucoside. Poss. a glycoside of Dihydroisorhamnetin (See 3,3′,4′,5,7-Pentahydroxyflavanone, P-118). Isol. from shells of peanuts (*Arachis hypogaea*). Brown-red powder.

Tuyeau, F. *et al., C. R. Hebd. Seances Acad. Sci.*, 1947, **224**, 290-291 (*Arachidoside, isol*)

Arachnitannin 1 A-121

Epiafzelechin-(2β →7,4β →8)-epiafzelechin-(4β →8)-3′-deoxydryopterin [135329-58-7]



$C_{47}H_{36}O_{16}$ 856.792
Isol. from *Arachniodes* spp. Pale brown powder. $[\alpha]_D^{20}$ +71 (c, 1.5 in MeOH). λ_{max} 225 (log ε 4.92); 277 (log ε 3.78) (MeOH).

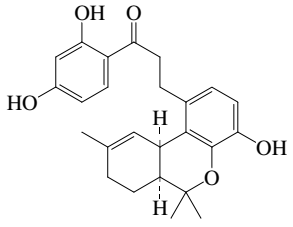
3‴-Hydroxy: [135329-57-6] ***Arachnitannin 3***. *Epiafzelechin-(2β →7,4β →8)-epiafzelechin-(4β →8)-dryopterin*
$C_{47}H_{36}O_{17}$ 872.791
From *Arachniodes* spp. $[\alpha]_D^{20}$ +62 (c, 1.2 in MeOH). λ_{max} 224 (log ε 4.86); 279 (log ε 3.72) (MeOH).

3′,3″,3‴-Trihydroxy: [135308-93-9] ***Arachnitannin 2***. *Epicatechin-(2β →7,4β →8)-epicatechin-(4β →8)-dryopterin*
$C_{47}H_{36}O_{19}$ 904.79
From *Arachniodes* spp. Pale brown powder. $[\alpha]_D^{20}$ +65 (c, 1 in MeOH). λ_{max} 284 (log ε 4.10) (MeOH).

Tanaka, N. *et al., Chem. Pharm. Bull.*, 1991, **39**, 55-59 (*Arachnitannins 1,2,3*)

Artaltilin A A-122

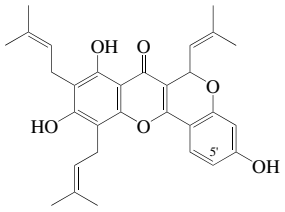
[943029-47-8]



$C_{25}H_{28}O_5$ 408.493
Constit. of the leaves of *Artocarpus altilis*. Yellowish oil. $[\alpha]_D^{20}$ +11.3 (c, 0.4 in MeOH). λ_{max} 279 (log ε 4.16); 316 (log ε 3.83); 341 (log ε 3.62) (MeOH).

Wang, Y. *et al., Phytochemistry*, 2007, **68**, 1300-1306 (*Artaltilin A, struct*)

Artelastin A-123



$C_{30}H_{32}O_6$ 488.579

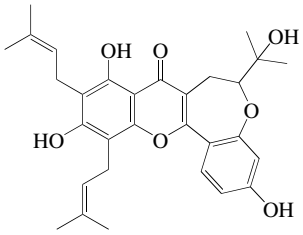
(ξ)-*form* [182052-05-7]
Constit. of wood of *Artocarpus elasticus*. Antineoplastic agent. Inhibitor of NO and ROS production. Orange-red gum. λ_{max} 207 (log ϵ 4.8); 260 (log ϵ 4.2); 276 (log ϵ 4.2); 369 (log ϵ 4.1) (MeOH).

5′-Hydroxy: [1174017-37-8] ***Artoheterophyllin B***. *Cyclorigidol* [1225288-93-6]
$C_{30}H_{32}O_7$ 504.579
Constit. of *Artocarpus heterophyllus* and the twigs of *Artocarpus rigida*. Amorph. yellow powder (hexane). $[\alpha]_D^{20}$ +20 (c, 0.2 in CH_2Cl_2). λ_{max} 228 (log ϵ 4.28); 282 (log ϵ 4.35); 386 (log ϵ 4.21) (CH_2Cl_2).

Kijjoa, A. *et al., Phytochemistry*, 1996, **43**, 691-694 (*Artelastin*)
Cidade, H.M. *et al., Planta Med.*, 2001, **67**, 867-870 (*activity*)
Cerqueira, F. *et al., Life Sci.*, 2003, **73**, 2321-2334 (*activity*)
Pedro, M. *et al., Life Sci.*, 2005, **77**, 293-311 (*activity*)
Cerqueira, F. *et al., Int. Immunopharmacol.*, 2008, **8**, 597-602 (*activity*)
Zheng, Z.-P. *et al., J. Agric. Food Chem.*, 2009, **57**, 6649-6655 (*Artoheterophyllin B*)
Ren, Y. *et al., J. Nat. Prod.*, 2010, **73**, 949-955 (*Cyclorigidol*)

Artelastocarpin A-124

Artelastinin (obsol.) [206271-03-6]

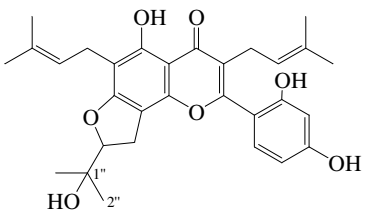


$C_{30}H_{34}O_7$ 506.594
The struct. shown was incorrectly assigned to a 1998 isolate and named Artelastinin. Renamed in 2001. Constit. of *Artocarpus elasticus*. Cytotoxic to human breast cancer and renal cancer cells. Yellow cryst. (Me_2CO). Mp 207-209°. Opt. inactive. λ_{max} 214 (log ϵ 4.4); 272 (log ϵ 4.1); 337 (log ϵ 4) (MeOH). λ_{max} 207 (log ϵ 4.2); 275 (log ϵ 3.9); 341 (log ϵ 3.8) (MeOH).

Kijjoa, A. *et al., Phytochemistry*, 1998, **47**, 875-878 (*Artelastocarpin, struct*)
Cidade, H.M. *et al., Planta Med.*, 2001, **67**, 867-870 (*Artelastocarpin, struct, activity*)
Cerqueira, F. *et al., Life Sci.*, 2003, **73**, 2321-2334 (*activity*)

Artelastofuran A-125

[206271-04-7]



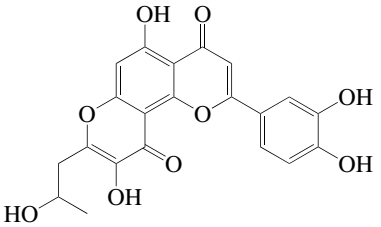
$C_{30}H_{34}O_7$ 506.594
Constit. of the wood of *Artocarpus elasticus* and *Artocarpus lanceifolius*. Moderate inhibitor of PHA-stimulated cell proliferation. Orange-red gum. λ_{max} 212 (log ϵ 4.4); 268 (log ϵ 4.2); 315 (sh)(MeOH).

1″-Deoxy, 1″,2″-didehydro: [406709-12-4] ***Artoindonesianin H***
$C_{30}H_{32}O_6$ 488.579
Constit. of the heartwood of *Artocarpus lanceifolius*. Amorph. yellow powder. λ_{max} 204 (log ϵ 4.05); 268 (log ϵ 3.86); 325 (sh) (MeOH).

Kijjoa, A. *et al., Phytochemistry*, 1998, **47**, 875-878 (*Artelastofuran, struct*)
Syah, Y.M. *et al., Fitoterapia*, 2001, **72**, 765-773 (*Artocarpus lanceifolius constits*)
Cerqueira, F. *et al., Life Sci.*, 2003, **73**, 2321-2334 (*activity*)

Arthraxin A-126

*2-(3,4-Dihydroxyphenyl)-5,9-dihydroxy-8-(2-hydroxypropyl)-4*H,*10*H-*benzo[1,2-*b*:*3,4-*b′]dipyran-4,10-dione,* 9CI [23986-34-7]



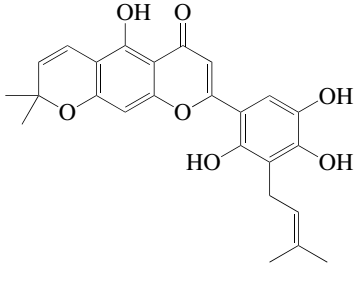
$C_{21}H_{16}O_9$ 412.352

(-)-form
Constit. of leaves and stems of *Arthraxon hispidus* and of *Miscanthus tinctorius*. Mp 336° dec. $[\alpha]_D^{24}$-29 (c, 0.5 in EtOH). λ_{max} 256; 273 (sh); 340 (EtOH).

Kaneta, M. *et al., Bull. Chem. Soc. Jpn.*, 1969, **42**, 2084 (*Arthraxin*)
Kaneta, M. *et al., JCS(C)*, 1971, 1982-1986 (*Arthraxin, struct*)
Kaneta, M. *et al., Bull. Chem. Soc. Jpn.*, 1972, **45**, 528-531 (*Miscanthus tinctorius constit*)

Artobilochromene A-127

*5-Hydroxy-2,2-dimethyl-8-[2,4,5-trihydroxy-3-(3-methyl-2-butenyl)phenyl]-2*H,*6*H-*benzo[1,2-*b*:*5,4-*b′]dipyran-6-one,* 9CI [54963-50-7]

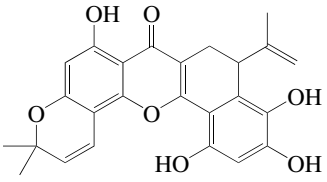


$C_{25}H_{24}O_7$ 436.46
Constit. of the bark of *Artocarpus nobilis*. Bright yellow cryst. (Et_2O/petrol or $CHCl_3$/MeOH). Mp 246-248° (244°). EtOH soln. slowly turns pink. λ_{max} 267 (log ϵ 4.63); 297 (log ϵ 4.13); 350 (log ϵ 3.34) (MeOH).

Kumar, N.S. *et al., JCS Perkin 1*, 1977, 1243-1251 (*Artobilochromene*)
Sultanbawa, M.U.S. *et al., Phytochemistry*, 1989, **28**, 599-606 (*Artocarpus nobilis constit*)

Artobiloxanthone A-128

*8,9-Dihydro-6,10,11,13-tetrahydroxy-3,3-dimethyl-9-(1-methylethenyl)-3*H,*7*H-*benzo[*c*]*pyrano[3,2-*h]*xanthen-7-one,* 9CI. *KB 1* [121748-25-2]
[133813-53-3]

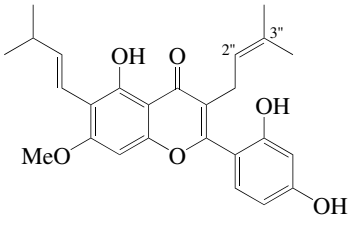


$C_{25}H_{22}O_7$ 434.445
Constit. of *Artocarpus nobilis* and *Artocarpus communis*. Inhibitor of glutathione S-transferase and murine leukaemia P388 cells. Yellow solid. Mp 163-167° (162-164°). λ_{max} 265 (log ϵ 4.34); 285 (log ϵ 4.35); 315 (sh) (log ϵ 4.07); 394 (log ϵ 4.02) ($CHCl_3$/MeOH).

Sultanbawa, M.U.S. *et al., Phytochemistry*, 1989, **28**, 599-605 (*Artocarpus nobilis constit*)
Fujimoto, Y. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1787-1789 (*Artocarpus communis constit*)
Jayasinghe, U.L.B. *et al., Fitoterapia*, 2008, **79**, 37-41 (*Artocarpus nobilis constit*)
Iverson, C.D. *et al., Phytochem. Lett.*, 2010, **3**, 207-211 (*activity*)
Hakim, E.H. *et al., Fitoterapia*, 2012, **73**, 668-673 (*activity*)

Artocarpin A-129

*2-(2,4-Dihydroxyphenyl)-5-hydroxy-7-methoxy-6-(3-methyl-1-butenyl)-3-(3-methyl-2-butenyl)-4*H-*1-benzopyran-4-one,* 9CI [7608-44-8]



$C_{26}H_{28}O_6$ 436.504
Constit. of *Artocarpus heterophyllus*, *Artocarpus chama*, *Artocarpus chaplasha*, *Artocarpus communis* and *Artocarpus integrifolia*. Exhibits weak but relatively broad inhibitory effects against various carcinomas. Yellow needles (Me_2CO, C_6H_6 or MeOH). Mp 174-175° (164-165°).

O-*De-Me:* [1006689-57-1] ***Norartocarpin***
$C_{25}H_{26}O_6$ 422.477
Constit. of *Artocarpus heterophyllus*. Pancreatic lipase inhibitor. Yellow powder. Mp 163-164° (158-159°). λ_{max} 278 (log ϵ 4.74); 321 (log ϵ 4.33); 395 (log ϵ 3.47) (MeOH).

8-Hydroxy: [1304495-67-7] ***8-Hydroxyartocarpin***
$C_{26}H_{28}O_7$ 452.503
Constit. of the stem bark of *Artocarpus altilis*. Pale yellow needles (EtOAc/hexane). Mp 215-217°. λ_{max} 223 (log ε 3.1); 280 (log ε 2.6); 306 (log ε 1.67); 346 (log ε 2.28) (MeOH).

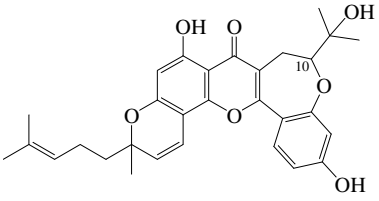
$\Delta^{3''}$-Isomer, 2''-oxo: [1429648-12-3] ***10-Oxoartogomezianone***
$C_{26}H_{26}O_7$ 450.487
Constit. of the heartwood of *Artocarpus altilis*. Amorph. yellow powder. λ_{max} 277 (log ε 4.68); 320 (log ε 4.29) (MeOH). λ_{max} 274; 386 (MeOH/NaOH).

$\Delta^{3''}$-Isomer, 2''ξ-hydroxy: [927174-58-1] ***Artogomezianone***
$C_{26}H_{28}O_7$ 452.503
Constit. of the heartwood of *Artocarpus gomezianus*. Yellow powder. $[\alpha]_D^{20}$ +28.4 (c, 0.1 in MeOH). λ_{max} 278 (log ε 4.57); 324 (log ε 3.1) (MeOH).

Rao, R. *et al., Indian J. Chem.*, 1972, **10**, 905-907 (*Artocarpus chaplasha constit*)
Lin, C.-N. *et al., Phytochemistry*, 1995, **39**, 1447-1451 (*Artocarpin*)
Wang, Y.-H. *et al., J. Nat. Prod.*, 2004, **67**, 757-761 (*Artocarpin, activity*)
Likhitwitayawuid, K. *et al., Chem. Biodiversity*, 2006, **3**, 1138-1143 (*Artogomezianone*)
Han, A.-R. *et al., J. Nat. Prod.*, 2006, **69**, 719-721 (*Artocarpus communis constit*)
Arung, E.T. *et al., Planta Med.*, 2006, **72**, 847-850 (*Norartocarpin*)
Chantrapromma, S. *et al., Acta Cryst. E*, 2007, **63**, o1864-o1866 (*Artocarpin, cryst struct*)
Shamaun, S.S. *et al., J. Nat. Med. (Tokyo)*, 2010, **64**, 478-481 (*8-Hydroxyartocarpin, Artocarpin*)
Lan, W.-C. *et al., Phytochemistry*, 2013, **89**, 78-88 (*10-Oxoartogomezianone*)
Zhang, W.-J. *et al., Tetrahedron*, 2013, **69**, 5850-5858 (*Artocarpin, Norartocarpin, synth*)

Artocarpol B A-130

[317821-24-2]



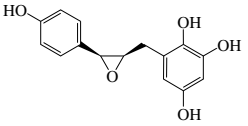
$C_{30}H_{32}O_7$ 504.579
Constit. of the root bark of *Artocarpus rigida*. Amorph. yellow powder (cyclohexane/Me_2CO). $[\alpha]_D^{25}$-2.4 (c, 0.1 in Me_2CO). λ_{max} 210 (log ε 4.6); 231 (log ε 4.51); 289 (log ε 4.56); 307 (sh) (log ε 4.42); 348 (log ε 4.44) (MeOH).

10-Epimer: [502627-55-6] ***Artocommunol CC***
$C_{30}H_{32}O_7$ 504.579
Constit. of the roots of *Artocarpus communis*. Amorph. yellow powder. $[\alpha]_D^{25}$ +43.1 (c, 0.1 in MeOH). λ_{max} 240 (log ε 4.58); 275 (log ε 4.61); 340 (log ε 4.34) (MeOH).

Ko, H.-H. *et al., Helv. Chim. Acta*, 2000, **83**, 3000-3005 (*Artocarpus rigida constit*)
Chan, S.-C. *et al., J. Nat. Prod.*, 2003, **66**, 427-430 (*Artocommunol CC*)

Artocarpol J A-131

[643733-92-0]



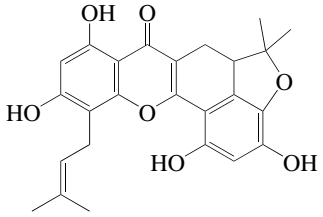
Relative Configuration

$C_{15}H_{14}O_5$ 274.273
Constit. of the root bark of *Artocarpus rigida*. Antiinflammatory agent (tetra-Ac). Oil (as tetra-Ac). $[\alpha]_D^{27}$ +46 (c, 1 in $CHCl_3$) (tetra-Ac). λ_{max} 210 (log ε 4.53); 275 (log ε 3.73) (MeOH) (tetra-Ac).

Lu, Y.-H. *et al., Helv. Chim. Acta*, 2003, **86**, 2566-2572 (*Artocarpol J, struct*)

Artocarpone B A-132

[1014626-12-0]

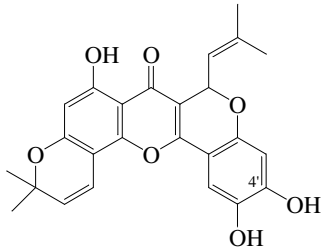


$C_{25}H_{24}O_7$ 436.46
Constit. of the stem bark of *Artocarpus champeden*. Yellow powder. $[\alpha]_D^{22}$ +42 (c, 0.02 in MeOH). λ_{max} 230 (log ε 4.3); 276 (log ε 4.11); 288 (log ε 4.11); 300 (log ε 4.09); 358 (log ε 3.8) (MeOH).

Widyawaruyanti, A. *et al., J. Nat. Med. (Tokyo)*, 2007, **61**, 410-413 (*Artocarpone B*)

Artochamin A A-133

*6,11,12-Trihydroxy-3,3-dimethyl-8-(2-methyl-1-propenyl)-3*H,*7*H,*8*H-*bis[1]benzopyrano[4,3-*b*:*6′,5′-*e*]pyran-7-one, 9CI. 5′-Hydroxycyclomorusin.* ***Artoindonesianin D*** [656832-73-4]



$C_{25}H_{22}O_7$ 434.445
Flavonoid numbering shown. Constit. of the roots of *Artocarpus chama*, *Artocarpus maingayi* and stem bark of *Artocarpus kemando*. Orange prisms (Me_2CO/petrol). Mp 238-240° (237-239°). Racemic. λ_{max} 227 (log ε 4.41); 270 (log ε 4.39); 282 (sh) (log ε 4.34); 407 (log ε 4.17) (MeOH).

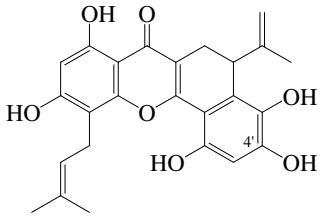
4′-Me ether: [135023-19-7] ***Cycloartomunin***
$C_{26}H_{24}O_7$ 448.471
Constit. of the root bark of *Artocarpus communis* and from *Morus alba*. Yellow needles (MeOH). Mp 278-280°. Racemic. λ_{max} 211 (log ε 4.75); 260 (log ε 4.3); 400 (log ε 3.67) (MeOH).

4′-Me ether, di-Ac:
Needles ($CHCl_3$). Mp 274-276°.

Lin, C.-N. *et al., Phytochemistry*, 1991, **30**, 1669-1671 (*Cycloartomunin*)
Achmad, S.A. *et al., CA*, 2003, **140**, 160452 (*Artoindonesianin D*)
Wang, Y.-H. *et al., J. Nat. Prod.*, 2004, **67**, 757-761 (*Artochamin A*)
Ee, G.C.L. *et al., Nat. Prod. Res.*, 2011, **25**, 995-1003 (*Artocarpus kemando constit*)

Artochamin E A-134

*5,6-Dihydro-1,3,4,8,10-pentahydroxy-11-(3-methyl-2-butenyl)-5-(1-methylethenyl)-7*H*-benzo[c]xanthen-7-one, 9CI. 5,6-Dihydro-1,3,4,8,10-pentahydroxy-5-isopropenyl-11-prenyl-7*H*-benzo[c]xanthen-7-one* [697234-29-0]



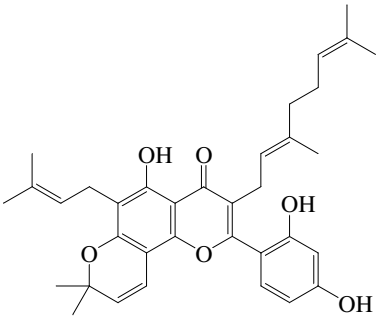
$C_{25}H_{24}O_7$ 436.46
Constit. of the roots of *Artocarpus chama*. Amorph. yellow powder. Racemic. λ_{max} 196 (log ε 4.02); 220 (log ε 4.3); 255 (log ε 4.32); 280 (sh) (log ε 4.06); 315 (log ε 4.23) (MeOH).

4′-Me ether: [886757-32-0] ***Dihydroartomunoxanthone***
$C_{26}H_{26}O_7$ 450.487
Constit. of the roots of *Artocarpus communis*. Orange powder. $[\alpha]_D^{25}$ +33 (c, 1 in Me_2CO). λ_{max} 220 (log ε 4.9); 260 (log ε 4.84); 375 (log ε 4.68) (MeOH). λ_{max} 250 (log ε 5.08); 330 (log ε 4.47); 420 (log ε 4.69) (MeOH/$AlCl_3$).

Wang, Y.-H. *et al., J. Nat. Prod.*, 2004, **67**, 757-761 (*Artochamin E*)
Weng, J.-R. *et al., Phytochemistry*, 2006, **67**, 824-829 (*Dihydroartomunoxanthone*)

Artocommunol CB A-135

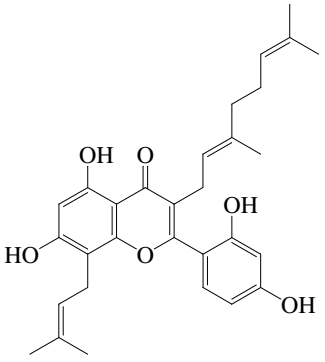
[502627-54-5]



$C_{35}H_{40}O_6$ 556.697
Constit. of the roots of *Artocarpus communis*. Yellow needles ($CHCl_3$). Mp 217-219°. λ_{max} 240 (log ϵ 4.61); 280 (log ϵ 4.59); 325 (log ϵ 4.24) (MeOH).

Chan, S.-C. *et al., J. Nat. Prod.*, 2003, **66**, 427-430 (*Artocommunol CB, struct*)

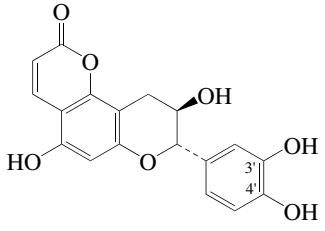
Artocommunol CD **A-136**
3-Geranyl-2′,4′,5,7-tetrahydroxy-8-prenylflavone [502627-56-7]



$C_{30}H_{34}O_6$ 490.595
Constit. of the roots of *Artocarpus communis*. Pale yellow needles (Me_2CO). Mp 183-185°. λ_{max} 210 (log ϵ 4.62); 265 (log ϵ 4.39); 325 (log ϵ 3.93) (MeOH).

Chan, S.-C. *et al., J. Nat. Prod.*, 2003, **66**, 427-430 (*Artocommunol CD, struct*)

Artoflavanocoumarin **A-137**
8-(3,4-Dihydroxyphenyl)-9,10-dihydro-5,9-dihydroxy-2H,8H-benzo[1,2-b:3,4-b′]dipyran-2-one, CAS [1423011-43-1]



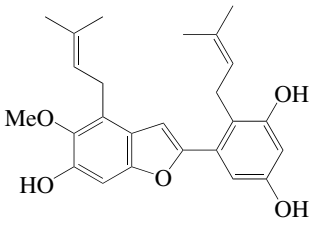
Absolute Configuration

$C_{18}H_{14}O_7$ 342.304
Constit. of stems of *Artocarpus nitidus*. Amorph. yellow solid. $[\alpha]_D^{20}$-5.7 (c, 0.28 in MeOH). λ_{max} 205 (log ϵ 4.17); 235 (sh); 287 (log ϵ 3.35); 330 (log ϵ 3.57) (MeOH).

5′-Hydroxy, 4′-Me ether: [1395102-10-9]
Glycoflavanone A
$C_{19}H_{16}O_8$ 372.331
Constit. of *Glycosmis pentaphylla*. Pale yellow powder. $[\alpha]_D^{26.3}$+101.3 (c, 0.07 in MeOH). λ_{max} 210 (log ϵ 3.51); 325 (log ϵ 4.02) (MeOH).

Ti, H.-H. *et al., J. Asian Nat. Prod. Res.*, 2012, **14**, 555-558 (*Artoflavanocoumarin*)
Wu, Y. *et al., J. Asian Nat. Prod. Res.*, 2012, **14**, 738-742 (*Glycoflavanone A*)

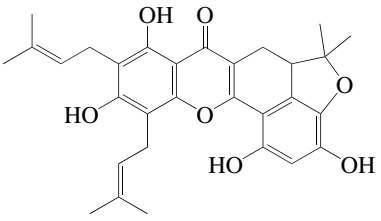
Artoheterophyllin A **A-138**
2-[3,5-Dihydroxy-2-(3-methyl-2-butenyl)phenyl]-5-methoxy-4-(3-methyl-2-butenyl)-6-benzofuranol. 2-(3,5-Dihydroxy-2-prenylphenyl)-6-hydroxy-5-methoxy-4-prenylbenzofuran [1174017-36-7]



$C_{25}H_{28}O_5$ 408.493
Constit. of *Artocarpus heterophyllus*. Yellow powder.

Zheng, Z.-P. *et al., J. Agric. Food Chem.*, 2009, **57**, 6649-6655 (*Artoheterophyllin A, struct*)

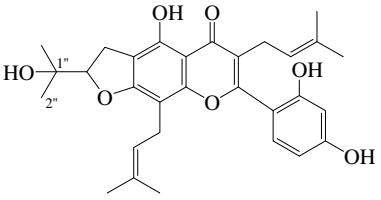
Artoheterophyllin C **A-139**
[1174017-38-9]



$C_{30}H_{32}O_7$ 504.579
Constit. of *Artocarpus heterophyllus*. Yellow powder. $[\alpha]_D^{25}$-25 (c, 0.1 in Me_2CO).

Zheng, Z.-P. *et al., J. Agric. Food Chem.*, 2009, **57**, 6649-6655 (*Artoheterophyllin C*)

Artoindonesianin I **A-140**
[406709-40-8]

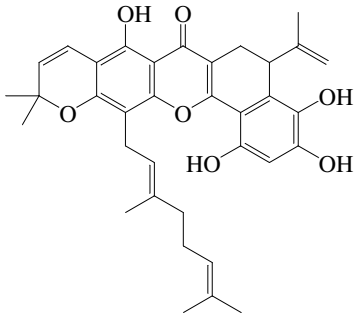


$C_{30}H_{34}O_7$ 506.594
Constit. of the heartwood of *Artocarpus lanceifolius*. Amorph. yellow powder. λ_{max} 204 (log ϵ 4.53); 266 (log ϵ 4.27); 314 (log ϵ 3.91) (MeOH).

1″-Deoxy,1″,2″-didehydro: [406707-47-9]
Artoindonesianin G
$C_{30}H_{32}O_6$ 488.579
Constit. of the heartwood of *Artocarpus lanceifolius*. Amorph. yellow powder. λ_{max} 204 (log ϵ 4.39); 268 (log ϵ 4.13); 325 (sh) (log ϵ 3.7) (MeOH).

Syah, Y.M. *et al., Fitoterapia*, 2001, **72**, 765-773 (*Artoindonesianins G,I, struct*)

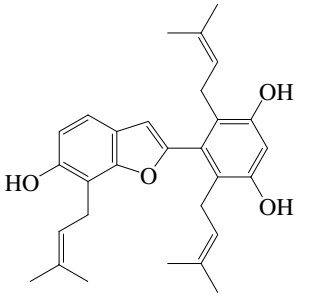
Artoindonesianin V **A-141**
[749908-33-6]



$C_{35}H_{38}O_7$ 570.681
Constit. of the heartwood of *Artocarpus champeden*. Cytotoxic against P-388 cell lines. Yellow powder. λ_{max} 202 (log ϵ 4.73); 239 (sh) (log ϵ 4.29); 293 (log ϵ 4.39); 383 (log ϵ 4.16) (MeOH).

Syah, Y.M. *et al., Fitoterapia*, 2004, **75**, 134-140 (*Artoindonesianin V, struct, activity*)

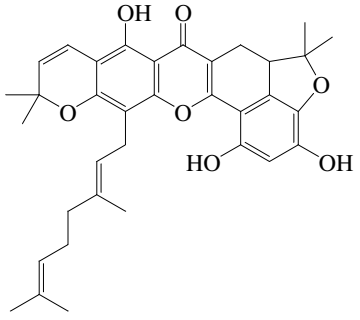
Artoindonesianin X **A-142**
2-(3,5-Dihydroxy-2,6-diprenylphenyl)-6-hydroxy-7-prenylbenzofuran [638199-48-1]



$C_{29}H_{34}O_4$ 446.585
Constit. of *Artocarpus fretessi*, *Artocarpus tonkinensis* and *Artocarpus nitidus*. Shows moderate invertebrate toxicity in *Artemia salina* (brine shrimp). Yellow powder. λ_{max} 203 (log ϵ 4.43); 297 (log ϵ 3.93) (MeOH).

Soekamto, N.H. *et al., Phytochemistry*, 2003, **64**, 831-834 (*Artoindonesianin X, struct, invertebrate toxicity*)

Artoindonesianin A **A-143**
[223386-73-0]

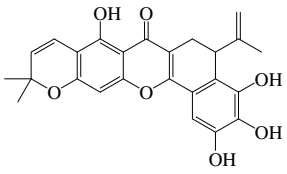


$C_{35}H_{38}O_7$ 570.681
Constit. of the roots of *Artocarpus champeden*. Exhibits moderate cytotoxic activity against murine leukaemia P-388 cells. Yellow powder. Mp 236-237°. $[\alpha]_D^{25}$ + 3.5 (c, 0.12 in MeOH). λ_{max} 208 (log ϵ 4.24); 244 (log ϵ 3.62); 296 (log ϵ 3.78); 320 (log ϵ 3.7); 388 (log ϵ 3.62) (MeOH).

Hakim, E.H. *et al., J. Nat. Prod.*, 1999, **62**, 613-615 (*Artoindonesianin A, struct*)

Artoindonesianin A_3 A-144

[944925-33-1]

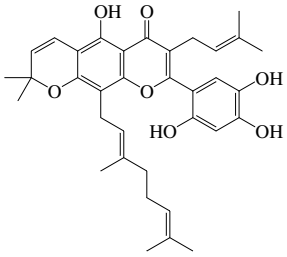


$C_{25}H_{22}O_7$ 434.445
Constit. of the heartwood of *Artocarpus champeden*. Pale yellow solid. λ_{max} 205 (log ϵ 4.33); 228 (log ϵ 4.23); 289 (log ϵ 4.24); 380 (log ϵ 4.13) (MeOH).

Syah, Y.M. *et al., J. Nat. Med. (Tokyo)*, 2006, **60**, 308-312 (*Artoindonesianin A_3, struct*)

Artoindonesianin U A-145

[749908-32-5]

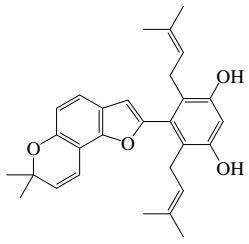


$C_{35}H_{40}O_7$ 572.697
Constit. of the heartwood of *Artocarpus champeden*. Cytotoxic against P-388 cell lines. Yellow powder. λ_{max} 203 (log ϵ 4.36); 283 (log ϵ 4.11); 338 (log ϵ 3.58) (MeOH).

Syah, Y.M. *et al., Fitoterapia*, 2004, **75**, 134-140 (*Artoindonesianin U, struct, activity*)

Artoindonesianin Y A-146

[638199-49-2]

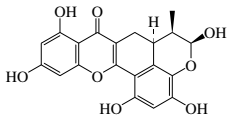


$C_{29}H_{32}O_4$ 444.569
Constit. of the root bark of *Artocarpus fretessi*. Shows moderate invertebrate toxicity in *Artemia salina* (brine shrimp). Yellow powder. λ_{max} 203 (log ϵ 4.4); 231 (log ϵ 4.28); 279 (log ϵ 3.98) (MeOH).

Soekamto, N.H. *et al., Phytochemistry*, 2003, **64**, 831-834 (*Artoindonesianin Y, struct, invertebrate toxicity*)

Artoindonesianin Z_1 A-147

[927811-87-8]



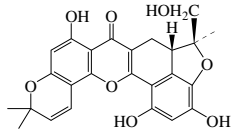
Relative Configuration

$C_{20}H_{16}O_8$ 384.342
Constit. of the bark of *Artocarpus lanceifolius*. Yellow needles. Mp 295-297°. $[\alpha]_D$ +1.8 (c, 0.7 in MeOH). λ_{max} 261 (log ϵ 3.96); 313 (log ϵ 3.47); 380 (log ϵ 3.9) (MeOH). λ_{max} 272 (log ϵ 3.93); 322 (log ϵ 3.4); 426 (log ϵ 4.08) (MeOH/NaOH).

Syah, Y.M. *et al., Z. Naturforsch., B*, 2006, **61**, 1134-1137 (*Artoindonesianin Z_1, struct*)

Artoindonesianin Z_2 A-148

[927811-88-9]

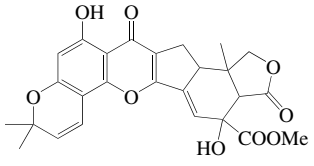


Relative Configuration

$C_{25}H_{22}O_8$ 450.444
Constit. of the bark of *Artocarpus lanceifolius*. Yellow needles. Mp 247-249°. $[\alpha]_D$-2 (c, 0.25 in MeOH). λ_{max} 228 (log ϵ 4.04); 273 (log ϵ 4.03); 394 (log ϵ 3.78) (MeOH). λ_{max} 205 (log ϵ 4.6); 265 (log ϵ 4.24); 435 (log ϵ 4.1) (MeOH/NaOH).

Syah, Y.M. *et al., Z. Naturforsch., B*, 2006, **61**, 1134-1137 (*Artoindonesianin Z_2, struct*)

Artoindonesianin Z_3 A-149

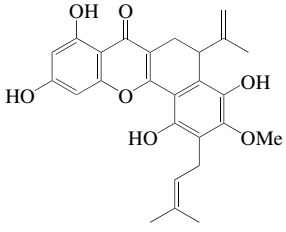


$C_{26}H_{24}O_9$ 480.47
Constit. of *Artocarpus lanceifolius*.

Hakim, E.H. *et al., J. Nat. Med. (Tokyo)*, 2006, **60**, 161-184 (*rev*)

Artoindonesianin Z_4 A-150

[1189132-13-5]

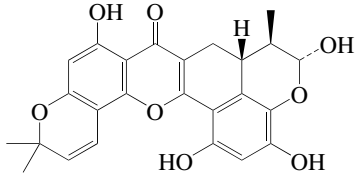


$C_{26}H_{26}O_7$ 450.487
Constit. of the bark of *Artocarpus lanceifolius*. Pale yellow solid. $[\alpha]_D$-2 (c, 0.1 in MeOH). λ_{max} 206 (log ϵ 4.6); 266 (log ϵ 4.28); 368 (log ϵ 4.1) (MeOH). λ_{max} 203 (log ϵ 4.82); 277 (log ϵ 4.31); 383 (log ϵ 4.06) (MeOH/NaOH).

Musthapa, I. *et al., Nat. Prod. Commun.*, 2009, **4**, 927-930 (*Artoindonesianin Z_4, struct*)

Artoindonesianin Z_5 A-151

[1189132-14-6]



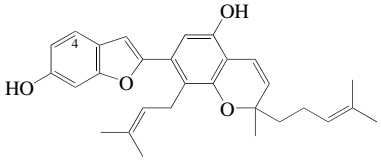
Relative Configuration

$C_{25}H_{22}O_8$ 450.444
Constit. of the bark of *Artocarpus lanceifolius*. Yellow solid. $[\alpha]_D$-18 (c, 0.1 in DMSO). λ_{max} 203 (log ϵ 4.15); 225 (log ϵ 4.18); 253 (log ϵ 4.16); 272 (log ϵ 4.18); 314 (sh) (log ϵ 3.84); 388 (log ϵ 4) (MeOH). λ_{max} 207 (log ϵ 5); 264 (log ϵ 4.29); 439 (log ϵ 4.11) (MeOH/NaOH).

Stereoisomer (?): ***Pyranocycloartobiloxanthone A***
$C_{25}H_{22}O_8$ 450.444
Constit. of the stem bark of *Artocarpus obtusus*. Antioxidant. Yellow needles. Mp 288-290°. No stereochem. or opt. rotn. reported. Uv spectra are different and one struct. assignment may be incorrect. λ_{max} 228 (log ϵ 1.25); 275 (log ϵ 1.35); 309 (log ϵ 0.47); 394 (log ϵ 0.99) (DMSO).

Musthapa, I. *et al., Nat. Prod. Commun.*, 2009, **4**, 927-930 (*Artoindonesianin Z_5*)
Hashim, N. *et al., J. Asian Nat. Prod. Res.*, 2010, **12**, 106-112 (*Pyranocycloartobiloxanthone A*)

Artolakoochol A-152



$C_{29}H_{32}O_4$ 444.569

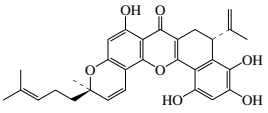
(-)-form [1245824-04-7]
Constit. of the root bark of *Artocarpus lakoocha*. Amorph. yellow solid. $[\alpha]_D^{20}$-86.1 (c, 0.03 in MeOH). λ_{max} 234 (log ϵ 3.16); 339 (log ϵ 3.23) (MeOH).

4-Hydroxy: [1245824-06-9] ***4-Hydroxyartolakoochol***
$C_{29}H_{32}O_5$ 460.569
Constit. of the root bark of *Artocarpus lakoocha*. Powder. $[\alpha]_D^{20}$-117.6 (c, 0.03 in MeOH). λ_{max} 240 (log ϵ 3.04); 341 (log ϵ 3.02) (MeOH).

Sritularak, B. *et al., Molecules*, 2010, **15**, 6548-6558 (*Artolakoochol, 4-Hydroxyartolakoochol, struct, cd*)

Artomunoisoxanthone A-153

[886757-34-2]



Relative Configuration

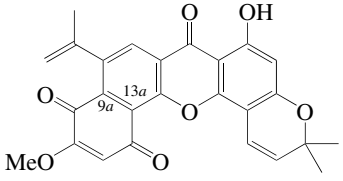
$C_{30}H_{30}O_7$ 502.563

Constit. of the roots of *Artocarpus communis*. Weak inhibitor of human platelet aggregation. Yellow powder. $[\alpha]_D^{25}$ +58 (c, 1 in Me_2CO). λ_{max} 213 (log ϵ 4.63); 270 (log ϵ 4.61); 380 (log ϵ 0.28) (MeOH). λ_{max} 250 (log ϵ 5.16); 450 (log ϵ 4.06) (MeOH/$AlCl_3$).

Weng, J.-R. *et al., Phytochemistry*, 2006, **67**, 824-827 (*Artomunoisoxanthone, struct, activity*)

Artomunoxanthentrione A-154

[139921-73-6]



$C_{26}H_{20}O_7$ 444.44

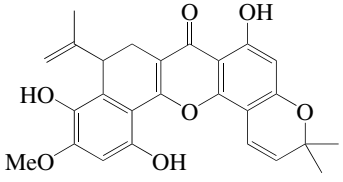
CA numbering shown. Constit. of *Artocarpus communis*. Red cryst. (EtOAc). Mp 230-232°. λ_{max} 236 (ϵ 18197); 243 (ϵ 14791) ($CHCl_3$).

9a,13a-Epoxide: [143522-33-2] *Artomunoxanthentrione epoxide*
$C_{26}H_{22}O_8$ 462.455
Constit. of the root bark of *Artocarpus communis*. Cytotoxicity towards human hepatoma cells *in vitro*. Orange needles (EtOAc). Mp 248-251°.

Shieh, W.-L. *et al., Phytochemistry*, 1992, **31**, 364-367 (*Artomunoxanthentrione*)
Lin, C.-N. *et al., Phytochemistry*, 1992, **31**, 2563-2564 (*epoxide*)
Liou, S.-S. *et al., J. Pharm. Pharmacol.*, 1993, **45**, 791-794 (*epoxide, activity*)

Artomunoxanthone A-155

[139906-74-4]



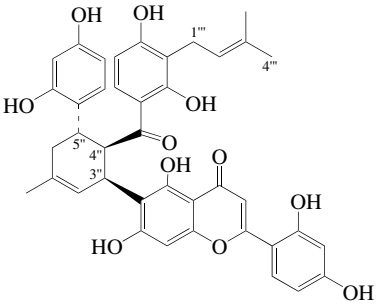
$C_{26}H_{24}O_7$ 448.471

Constit. of *Artocarpus communis*. Exhibits significant inhibition of KB cells *in vitro*. Yellow needles (EtOAc). Mp 269-270°. λ_{max} 253 (ϵ 21380); 268 (ϵ 22387); 384 (ϵ 9333) (MeOH).

Shieh, W.-L. *et al., Phytochemistry*, 1992, **31**, 364-367 (*Artomunoxanthone*)
Lou, S.-S. *et al., J. Pharm. Pharmacol.*, 1993, **45**, 791-794 (*activity*)

Artonin I A-156

[144923-70-6]



$C_{40}H_{36}O_{11}$ 692.718

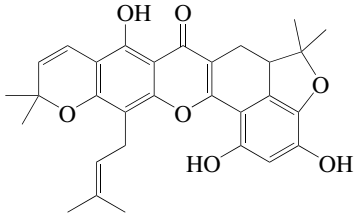
Constit. of the root bark of *Morus heterophyllus* and leaves of *Morus mesozygia*. Weak inhibitor of snake venom phosphodiesterase I. Yellow powder. $[\alpha]_D$ +95 (c, 0.05 in Me_2CO).

4'''-Hydroxy (3'''ξ-): [1415563-05-1]
Mesozygin C
$C_{40}H_{36}O_{12}$ 708.717
Constit. of leaves of *Morus mesozygia*. Exhibits significant phosphodiesterase I inhibitory activity. Yellow powder. Mp 233-235°. $[\alpha]_D^{25}$ +85.7 (c, 0.4 in MeOH). λ_{max} 286 (log ϵ 3.06); 339 (log ϵ 3.04) (MeOH).

Hano, Y. *et al., Chem. Comm.*, 1992, 1177-1778 (*Artonin I*)
Fozing, C.D.A. *et al., Planta Med.*, 2012, **78**, 154-159 (*Mesozygin C, Morus mesozygia constit, activity*)

Artonin A A-157

[124721-15-9]



$C_{30}H_{30}O_7$ 502.563

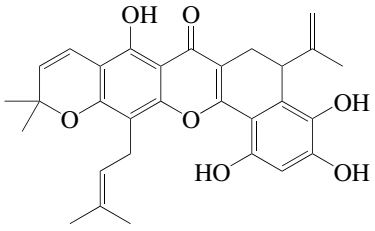
Constit. of *Artocarpus heterophyllus*, *Artocarpus communis*, *Artocarpus chama*, *Artocarpus tonkinensis* and *Artocarpus styracifolius*. Cytotoxic against human lung carcinoma A-549 and human breast adenocarcinoma MCF-7 cells. Yellow prisms (MeOH). Mp 239-240°. $[\alpha]_D^{23}$-6 (c, 0.1 in Me_2CO). $[\alpha]_D^{25}$-23 (c, 0.1 in Me_2CO).

Hano, Y. *et al., Heterocycles*, 1989, **29**, 1447-1453 (*Artonin A, cryst struct*)

Wang, Y.-H. *et al., J. Nat. Prod.*, 2004, **67**, 757-761 (*Artocarpus chama constit, activity*)
Wei, B.-L. *et al., J. Agric. Food Chem.*, 2005, **53**, 3867-3871 (*Artocarpus heterophyllus constit, struct*)
Ma, J.-P. *et al., J. Asian Nat. Prod. Res.*, 2010, **12**, 586-592 (*Artocarpus tonkinensis constit*)
Bourjot, M. *et al., Planta Med.*, 2010, **76**, 1600-1604 (*Artocarpus styracifolius constit*)

Artonin B A-158

[124693-70-5]



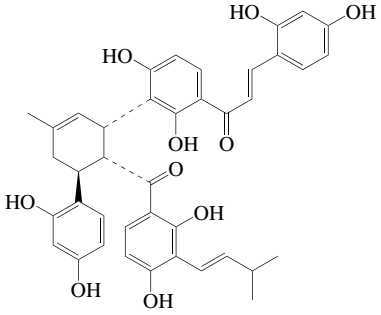
$C_{30}H_{30}O_7$ 502.563

Constit. of *Artocarpus heterophyllus*, *Artocarpus communis*, *Artocarpus champeden* and *Artocarpus styracifolius*. Exhibits inhibitory activity against human mouth epidermoid carcinoma KB, diploid embryonic lung MRC-5 cells and *Trypanosoma brucei*. Yellow needles (C_6H_6). Mp 219-222° (202-204°). $[\alpha]_D^{22}$-4 (c, 0.1 in Me_2CO). $[\alpha]_D^{25}$-32 (c, 0.1 in Me_2CO). λ_{max} 211; 368; 394 (MeOH).

Hano, Y. *et al., Heterocycles*, 1989, **29**, 1447-1453 (*Artonin B, cryst struct*)
Chung, M.-I. *et al., Phytochemistry*, 1995, **40**, 1279-1282 (*Artocarpus heterophyllus constit*)
Syah, Y.M. *et al., Fitoterapia*, 2004, **75**, 134-140 (*Artocarpus champeden constit*)
Wei, B.-L. *et al., J. Agric. Food Chem.*, 2005, **53**, 3867-3871 (*Artocarpus heterophyllus constit, struct*)
Bourjot, M. *et al., Planta Med.*, 2010, **76**, 1600-1604 (*Artocarpus styracifolius constit, activity*)

Artonin C A-159

[128553-97-9]



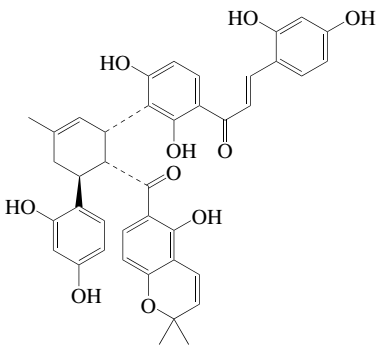
$C_{40}H_{38}O_{10}$ 678.734

Constit. of *Artocarpus heterophyllus*. Yellow powder. Mp 169-171°. $[\alpha]_D^{22}$ +20 (c, 0.09 in MeOH).

Hano, Y. *et al., J. Nat. Prod.*, 1990, **53**, 391-395 (*Artonin C, struct*)

Artonin D A-160

[128532-95-6]

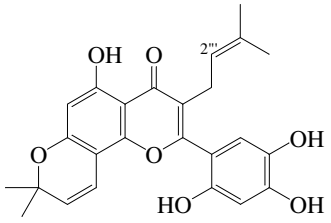


$C_{40}H_{36}O_{10}$ 676.718
Constit. of *Artocarpus heterophyllus*. Yellow powder. Mp 140-143°. $[\alpha]_D$+77 (c, 0.172 in MeOH).

Hano, Y. *et al., J. Nat. Prod.*, 1990, **53**, 391-395 (*Artonin D, struct*)

Artonin E A-161

KB 3 [129683-93-8]



$C_{25}H_{24}O_7$ 436.46
Numbering systems vary. Constit. of *Artocarpus communis*, *Artocarpus nobilis*, *Artocarpus chama*, *Artocarpus rotunda*, *Artocarpus communis* and *Artocarpus scortechinii*. Arachidonate 5-lipoxygenase inhibitor. Exhibits strong cytotoxicity against 1A9 (ovarian), significant activity against MCF-7 (breast) and moderate activity against HCT-8 and MDA-MB 231 tumour cell lines. Yellow needles (C_6H_6/Me_2CO). Mp 244-248°. λ_{max} 233; 274 (EtOH).

2′-Me ether: [1058721-47-3] ***2′-O-Methylartonin E***
$C_{26}H_{26}O_7$ 450.487
Constit. of the root bark of *Artocarpus nobilis*. Mp 97°. λ_{max} 252; 290; 349 (EtOH).

4′-Me ether: [1185843-61-1] ***Artoflavone A***
$C_{26}H_{26}O_7$ 450.487
Constit. of *Artocarpus communis*. Antioxidant. Yellow powder. λ_{max} 270 (log ϵ 4.15); 300 (sh) (log ϵ 3.45); 350 (log ϵ 3.45) (MeOH).

1‴ξ-Hydroxy: [1429744-55-7] ***11-Hydroxyartonin E***. *Hydroxyartoflavone A (incorr.)*
$C_{25}H_{24}O_8$ 452.46
Constit. of *Artocarpus altilis*. Light yellow powder. $[\alpha]_D^{25}$+295 (c, 0.1 in Me_2CO). λ_{max} 267 (log ϵ 4.3); 404 (log ϵ 4.03) (MeOH). λ_{max} 275; 430 (MeOH/NaOH).

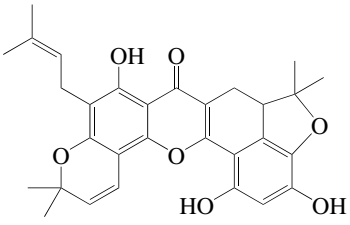
4‴-Hydroxy(Z-): [561029-55-8] ***14-Hydroxyartonin E***
$C_{25}H_{24}O_8$ 452.460
Constit. of the stems of *Artocarpus lanceifolius*. Yellow powder. λ_{max} 211 (log ϵ 4.45); 270 (log ϵ 4.35); 314 (sh) (log ϵ 3.6); 387 (log ϵ 3.55) (MeOH).

2‴,3‴-Dihydro, 3‴-hydroxy: [133740-64-4] ***KB 2***
$C_{25}H_{26}O_8$ 454.476
Constit. of *Artocarpus communis*. Exhibits strong cytotoxic activity against leukaemia cells L-1210. Mp 166-168°.

Fujimoto, Y. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1787-1789 (*KB2, activity*)
Hano, Y. *et al., Heterocycles*, 1990, **31**, 877-882 (*Artonin E*)
Reddy, G.R. *et al., Biochem. Pharmacol.*, 1991, **41**, 115-118 (*Artonin E, activity*)
Aida, M. *et al., Heterocycles*, 1997, **45**, 163-176 (*Artocarpus communis constit*)
Suhartati, T. *et al., Fitoterapia*, 2001, **72**, 912-918 (*Artocarpus rotunda constit*)
Cao, S. *et al., Nat. Prod. Res.*, 2003, **17**, 79-81 (*14-Hydroxyartonin E*)
Wang, Y.-H. *et al., J. Nat. Prod.*, 2004, **67**, 757-761 (*Artocarpus chama constit, activity*)
Jayasinghe, U.L.B. *et al., Fitoterapia*, 2008, **79**, 37-41 (*2′-O*-Methylartonin E)
Lin, K.-W. *et al., Food Chem.*, 2009, **115**, 558-562 (*Artoflavone A*)
Jantan, I. *et al., J. Nat. Med. (Tokyo)*, 2010, **64**, 365-369 (*Artocarpus scortechinii constit*)
Lan, W.-C. *et al., Phytochemistry*, 2013, **89**, 78-88 (*11-Hydroxyartonin E*)

Artonin F A-162

[129683-94-9]

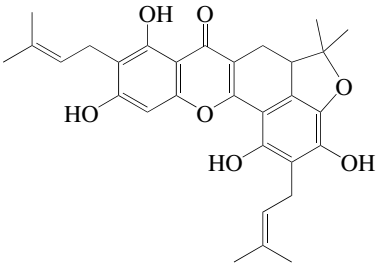


$C_{30}H_{30}O_7$ 502.563
Constit. of *Artocarpus communis*, *Artocarpus rigida*, *Artocarpus elasticus* and *Artocarpus styracifolius*. Exhibits strong activity against *Mycobacterium tuberculosis*. Yellow needles (C_6H_6/Me_2CO). Mp 251-253° (248°). λ_{max} 204 (log ϵ 4.62); 229 (log ϵ 4.45); 257 (log ϵ 4.38); 278 (log ϵ 4.4); 335 (log ϵ 3.95); 390 (log ϵ 4.04) (EtOH).

Hano, Y. *et al., Heterocycles*, 1990, **31**, 877-882 (*Artocarpus communis constit*)
Ko, H.-H. *et al., J. Nat. Prod.*, 2005, **68**, 1692-1695 (*Artocarpus elasticus constit*)
Namdaung, U. *et al., Chem. Pharm. Bull.*, 2006, **54**, 1433-1436 (*Artocarpus rigida constit, activity*)
Bourjot, M. *et al., Planta Med.*, 2010, **76**, 1600-1604 (*Artocarpus styracifolius constit*)

Artonin G A-163

5a,6-Dihydro-1,3,8,10-tetrahydroxy-5,5-dimethyl-2,9-bis(3-methyl-2-butenyl)-5H,7H-benzofuro[3,4-bc]xanthen-7-one, 9CI [133866-93-0]

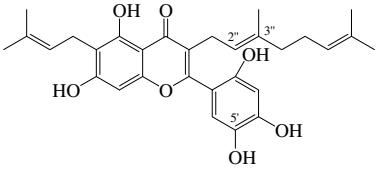


$C_{30}H_{32}O_7$ 504.579
Constit. of the bark of *Artocarpus rigida*. Yellow needles (Et_2O/hexane). Mp 198-203°. $[\alpha]_D^{20}$+80 (c, 0.2 in CH_2Cl_2). Racemic. λ_{max} 376 (ϵ 19498) (MeOH). λ_{max} 235 (log ϵ 4.23); 270 (log ϵ 4.23); 325 (log ϵ 4.04); 376 (log ϵ 4.21) (CH_2Cl_2).

Hano, Y. *et al., Heterocycles*, 1990, **31**, 2173-2179 (*Artonin G, struct*)
Ren, Y. *et al., J. Nat. Prod.*, 2010, **73**, 949-955 (*Artonin G, struct*)

Artonin H A-164

3-Geranyl-2′,4′,5,5′,7-pentahydroxy-6-prenylflavone [133866-94-1]



$C_{30}H_{34}O_7$ 506.594
Constit. of the bark of *Artocarpus rigida*. Amorph powder. λ_{max} 206 (ϵ 48980); 258 (ϵ 27540); 302 (ϵ 11220) (MeOH) (Berdy).

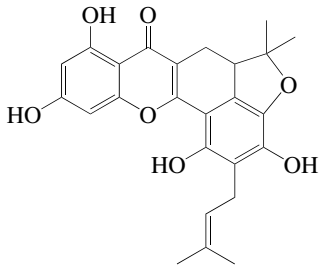
5′-Deoxy: [54835-67-5] ***Rubraflavone C***
$C_{30}H_{34}O_6$ 490.595
Constit. of *Artocarpus rigida* and *Morus rubra*. Yellow solid.

5′-Deoxy, 2″,3″-dihydroxy, 2″,3″-dihydro: [459155-95-4] ***Artocarpol H***
$C_{30}H_{36}O_8$ 524.61
Constit. of the root bark of *Artocarpus rigida*. Yellow needles (Me_2CO). Mp 199-200°. $[\alpha]_D^{27}$-13.5 (c, 0.1 in Me_2CO). λ_{max} 215 (log ϵ 3.53); 291 (log ϵ 3.16) (MeOH).

Hano, Y. *et al., Heterocycles*, 1990, **31**, 2173-2179 (*Artonin H*)
Lu, Y.-H. *et al., Helv. Chim. Acta*, 2002, **85**, 1626-1632 (*Artocarpol H, Rubraflavone C*)

Artonin J A-165

[148719-51-1]



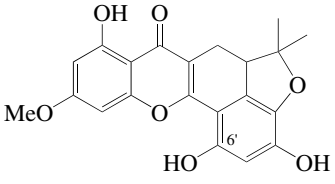
$C_{25}H_{24}O_7$ 436.46
Constit. of the root bark of *Artocarpus heterophyllus*. Yellow prisms (MeOH). Mp 281-282°. Racemic. λ_{max} 210 (log ϵ 4.35); 232 (log ϵ 4.05); 264 (log ϵ 4.03); 320 (sh); 380 (log ϵ 4.01) (EtOH).

7-Me ether: [161017-03-4] ***Artonin T***
$C_{26}H_{26}O_7$ 450.487
Constit. of the bark of *Artocarpus heterophyllus*. Yellow needles (Me_2CO). Mp 252°. Racemic. λ_{max} 209 (log ϵ 4.45); 264 (log ϵ 4.1); 380 (log ϵ 4.07) (EtOH).

Aida, M. *et al., Heterocycles*, 1993, **36**, 575-583 (*Artonin J, struct*)
Aida, M. *et al., Heterocycles*, 1994, **39**, 847-858 (*Artonin T, struct*)
Zheng, Z.-P. *et al., J. Agric. Food Chem.*, 2009, **57**, 6649-6655 (*Artonin J*)

Artonin K A-166

[148719-61-3]



$C_{21}H_{18}O_7$ 382.369
Constit. of the root bark of *Artocarpus heterophyllus*, *Artocarpus communis* and *Artocarpus rigida*. Yellow prisms (Me_2CO). Mp 312-314°. Racemic. λ_{max} 207 (log ϵ 4.36); 232 (log ϵ 4.05); 263 (log ϵ 4.16); 320 (sh); 382 (log ϵ 4.02) (EtOH).

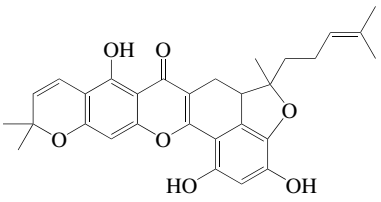
6′-Me ether: [148719-52-2] ***Artonin L***
$C_{22}H_{20}O_7$ 396.396
Constit. of the root bark of *Artocarpus heterophyllus*. Yellow prisms (MeOH). Mp 249-250°. Racemic. λ_{max} 210 (log ϵ 4.3); 232 (sh); 263 (log ϵ 4.16); 320 (sh); 381 (log ϵ 4.09) (EtOH).

O-*De-Me:* [148719-53-3] ***Artoindonesianin P***
$C_{20}H_{16}O_7$ 368.342
Constit. of the bark of *Artocarpus lanceifolius*. Cytotoxic. Yellow cryst. (EtOAc). Mp > 300°. $[\alpha]_D^{25}$ +1.5 (c, 0.1 in MeOH). λ_{max} 210 (log ϵ 5.03); 228 (log ϵ 4.81); 264 (log ϵ 4.79); 324 (log ϵ 4.33); 380 (log ϵ 4.62); 388 (log ϵ 3.62) (MeOH).

Aida, M. *et al., Heterocycles*, 1993, **36**, 575-583 (*Artonins K,L, struct*)
Aida, M. *et al., Heterocycles*, 1997, **45**, 163-176 (*Artocarpus communis constit*)
Hakim, E.H. *et al., Fitoterapia*, 2002, **73**, 668-673 (*Artoindonesianin P*)
Ren, Y. *et al., J. Nat. Prod.*, 2010, **73**, 949-955 (*Artocarpus rigida constit*)

Artonin M A-167

[151627-66-6]

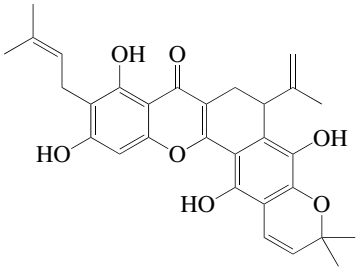


$C_{30}H_{30}O_7$ 502.563
Constit. of the bark of *Artocarpus rigida*. Yellow plates (Me_2CO/hexane). Mp 240-249° dec. Racemic.

Hano, Y. *et al., Heterocycles*, 1993, **35**, 1341-1350 (*Artonin M, struct*)

Artonin N A-168

[151606-36-9]

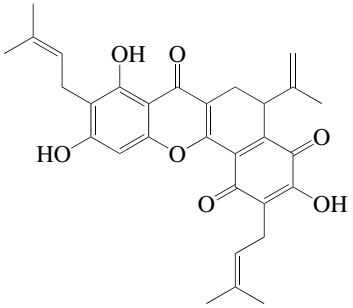


$C_{30}H_{30}O_7$ 502.563
Constit. of the bark of *Artocarpus rigida*. Yellow needles (hexane/Et_2O). Mp 223-230° dec. Racemic.

Hano, Y. *et al., Heterocycles*, 1993, **35**, 1341-1350 (*Artonin N, struct*)

Artonin O A-169

[151652-48-1]

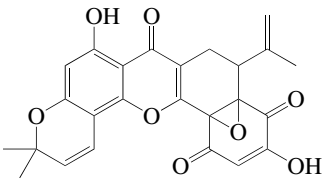


$C_{30}H_{30}O_7$ 502.563
Constit. of the bark of *Artocarpus rigida*. Reddish prisms (hexane/Et_2O). Mp 200° dec. Racemic.

Hano, Y. *et al., Heterocycles*, 1993, **35**, 1341-1350 (*Artonin O, struct*)

Artonin P A-170

[151606-37-0]

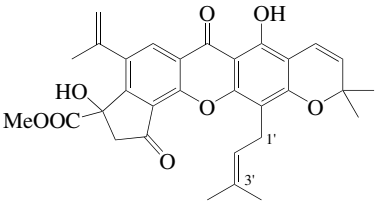


$C_{25}H_{20}O_8$ 448.428
Constit. of the bark of *Artocarpus rigida*. Reddish powder. λ_{max} 206 (ϵ 33884); 267 (ϵ 57544); 365 (ϵ 14791) (MeOH).

Hano, Y. *et al., Heterocycles*, 1993, **35**, 1341-1350 (*Artonin P, struct*)

Artonin Q A-171

[161017-00-1]



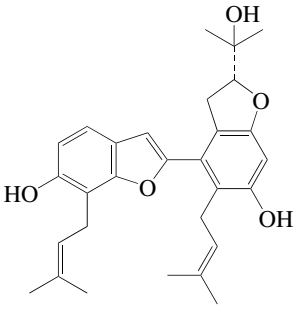
$C_{31}H_{30}O_8$ 530.573
Constit. of the bark of *Artocarpus heterophyllus*. Yellow cryst. (hexane/Et_2O). Mp 57-59°. Racemic. λ_{max} 205 (ϵ 30900); 225 (ϵ 25120); 250 (sh) (ϵ 26300); 302 (ϵ 27540); 350 (ϵ 8910); 390 (ϵ 4070) (MeOH).

Δ1′-Isomer, 3′-hydroperoxy: [161017-01-2] ***Artonin R***
$C_{31}H_{30}O_{10}$ 562.572
Constit. of *Artocarpus heterophyllus*. Yellow cryst. (hexane/Et_2O). Mp 173°. λ_{max} 202 (ϵ 7940); 226 (ϵ 7410); 298 (ϵ 6310); 350 (ϵ 2090); 400 (ϵ 830) (MeOH).

Aida, M. *et al., Heterocycles*, 1994, **39**, 847-858 (*Artonins Q,R, struct*)

Artonitidin A A-172

[1253184-81-4]



Absolute Configuration

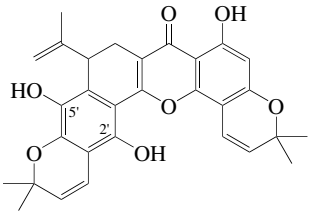
$C_{29}H_{34}O_5$ 462.585
Constit. of the stems of *Artocarpus nitidus*. Amorph. yellow powder. $[\alpha]_D^{20}$ -25.7 (c, 0.2 in EtOH). *R*-Stereochem.

proposed on the basis of comparison of the sign of opt. rotn. with those of other related compds. λ_{max} 206 (log ϵ 4.45); 306 (log ϵ 4.4) (MeOH).

Zhao, T. *et al., Chem. Biodiversity*, 2009, **6**, 2209-2216 (*Artonitidin A, struct, abs config*)

Artonol C A-173

[186824-59-9]



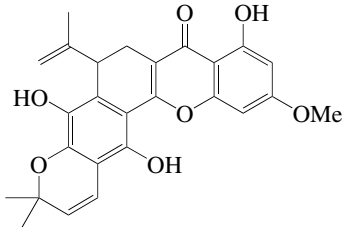
$C_{30}H_{28}O_7$ 500.547
Constit. of the bark of *Artocarpus communis*. Yellow needles ($MeOH/C_6H_6$). Mp 182-184°. Racemic. λ_{max} 237 (log ϵ 4.36); 281 (log ϵ 4.44); 345 (log ϵ 3.9); 386 (log ϵ 4.11) (MeOH).

2′,5′-Quinone: [186824-60-2] ***Artonol D***
$C_{30}H_{26}O_7$ 498.531
Constit. of the bark of *Artocarpus communis*. Reddish needles (Me_2CO). Mp 130°. λ_{max} 235 (log ϵ 4.33); 265 (log ϵ 4.43); 337 (log ϵ 3.84) (MeOH).

Aida, M. *et al., Heterocycles*, 1997, **45**, 163-175 (*Artonols C,D, struct*)

Artonol E A-174

[186824-61-3]



$C_{26}H_{24}O_7$ 448.471
Constit. of the bark of *Artocarpus communis*. Yellow needles (EtOAc). Mp 224-227°. λ_{max} 211 (log ϵ 4.31); 271 (log ϵ 4.26); 377 (log ϵ 4.09) (MeOH).

O-*De-Me:* [871118-73-9] ***De-O-methylartonol E***. *Artelastoxanthone*
$C_{25}H_{22}O_7$ 434.445
Constit. of the root bark of *Artocarpus rigidus* ssp. *rigidus* and *Artocarpus elasticus*. Pale yellow-brown powder or orange gum. Mp 224-226°. $[\alpha]_D^{26}$-7.6 (c, 0.29 in MeOH). $[\alpha]_D^{28}$-67 (c, 0.2 in Me_2CO). λ_{max} 210 (log ϵ 4.54); 265 (sh) (log ϵ 4.45); 275 (log ϵ 4.5); 390 (log ϵ 4.08) (MeOH).

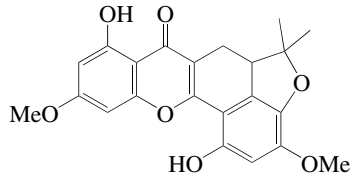
Aida, M. *et al., Heterocycles*, 1997, **45**, 163-175 (*Artonol E*)

Ko, H.-H. *et al., J. Nat. Prod.*, 2005, **68**, 1692-1695 (*Artelastoxanthone*)

Namdaung, U. *et al., Chem. Pharm. Bull.*, 2006, **54**, 1433-1436 (*De-O-methylartonol E*)

Artopeden A A-175

[1149350-15-1]

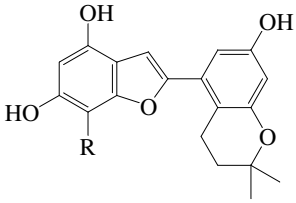


$C_{22}H_{20}O_7$ 396.396
Isol. from bark of *Artocarpus champeden*. Shows potent antiplasmodial activity against *Plasmodium falciparum*. $[\alpha]_D^{23}$0 (MeOH). Presumably racemic. λ_{max} 205 (log ϵ 4.3); 370 (log ϵ 4.3) (MeOH).

Wahyuni, T.S. *et al., Heterocycles*, 2009, **79**, 1121-1126 (*Artopeden A, struct, antiplasmodial activity*)

Artopetelin I A-176

[942582-22-1]



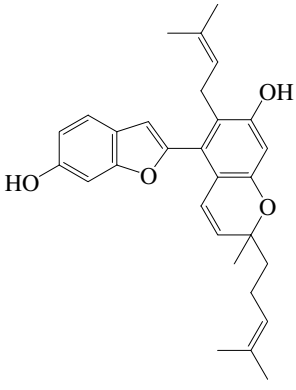
R = $-C(CH_3)_2CH{=}CH_2$

$C_{24}H_{26}O_5$ 394.466
Constit. of the root bark of *Artocarpus petelotii*. Amorph. yellow powder. Mp 146-148°. λ_{max} 218 (log ϵ 4.26); 316 (log ϵ 4.15) (MeOH).

Shen, H. *et al., Heterocycles*, 2007, **71**, 1147-1154 (*Artopetelin I, struct*)

Artopetelin A A-177

[870273-73-7]

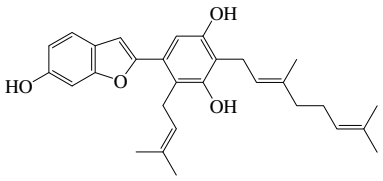


$C_{29}H_{32}O_4$ 444.569
Constit. of the root bark of *Artocarpus petelotii*. Pale yellow powder. $[\alpha]_D^{20}$-40.9 (c, 0.23 in Me_2CO). λ_{max} 215 (log ϵ 4.52); 299 (log ϵ 4.2) (MeOH).

Chen, L. *et al., Helv. Chim. Acta*, 2005, **88**, 2554-2560 (*Artopetelin A, struct*)

Artopetelin B A-178

2-(4-Geranyl-3,5-dihydroxy-2-prenylphenyl)-6-hydroxybenzofuran [870273-75-9]

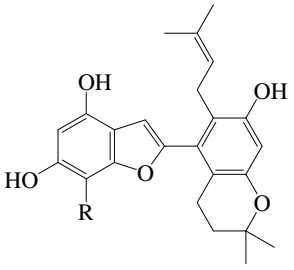


$C_{29}H_{34}O_4$ 446.585
Constit. of the root bark of *Artocarpus petelotii*. Orange powder. λ_{max} 219 (log ϵ 4.44); 281 (sh) (log ϵ 4.15); 312 (log ϵ 4.36) (MeOH).

Chen, L. *et al., Helv. Chim. Acta*, 2005, **88**, 2554-2560 (*Artopetelin B, struct*)

Artopetelin C A-179

[870273-77-1]



R = $-C(CH_3)_2CH{=}CH_2$

$C_{29}H_{34}O_5$ 462.585
Constit. of the root bark of *Artocarpus petelotii*. Pale yellow powder. λ_{max} 222 (log ϵ 4.48); 291 (log ϵ 4.14) (MeOH).

Chen, L. *et al., Helv. Chim. Acta*, 2005, **88**, 2554-2560 (*Artopetelin C, struct*)

Artopetelin D A-180

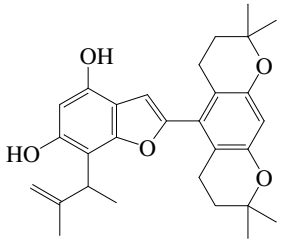
[903577-20-8]

As Artopetelin C, A-179 with
R = -$CH(CH_3)C(CH_3){=}CH_2$
$C_{29}H_{34}O_5$ 462.585
Constit. of the root bark of *Artocarpus petelotii*. Pale yellow powder. $[\alpha]_D^{20}$+0.7 (c, 0.15 in Me_2CO). λ_{max} 204 (log ϵ 4.52); 291 (log ϵ 3.95) (MeOH).

Chen, L. *et al., Helv. Chim. Acta*, 2006, **89**, 1000-1007 (*Artopetelin D, struct*)

Artopetelin E A-181

[903577-22-0]



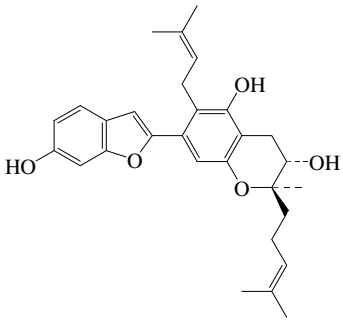
$C_{29}H_{34}O_5$ 462.585

Constit. of the root bark of *Artocarpus petelotii*. Pale yellow powder. $[\alpha]_D^{20}$ +7.9 (c, 0.19 in Me_2CO). λ_{max} 206 (log ϵ 4.38); 248 (sh) (log ϵ 3.94); 297 (log ϵ 4) (MeOH).

Chen, L. *et al., Helv. Chim. Acta*, 2006, **89**, 1000-1007 (*Artopetelin E, struct*)

Artopetelin F **A-182**

[903577-24-2]



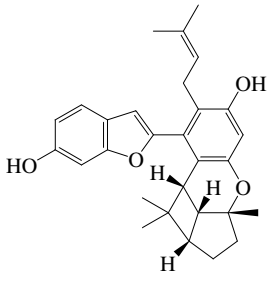
Relative Configuration

$C_{29}H_{34}O_5$ 462.585
Constit. of the root bark of *Artocarpus petelotii*. Pale yellow powder. Racemic. λ_{max} 216 (log ϵ 4.38); 313 (log ϵ 4.22) (MeOH).

Chen, L. *et al., Helv. Chim. Acta*, 2006, **89**, 1000-1007 (*Artopetelin F, struct, biosynth*)

Artopetelin G **A-183**

[903577-26-4]



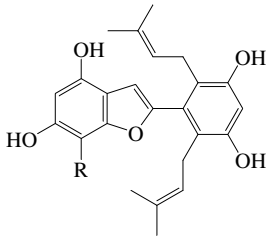
Relative Configuration

$C_{29}H_{32}O_4$ 444.569
Constit. of the root bark of *Artocarpus petelotii*. Amorph. powder. $[\alpha]_D^{20}$ +3.5 (c, 0.2 in Me_2CO). λ_{max} 215 (log ϵ 4.49); 298 (log ϵ 4.18) (MeOH).

Chen, L. *et al., Helv. Chim. Acta*, 2006, **89**, 1000-1007 (*Artopetelin G, struct, biosynth*)

Artopetelin H **A-184**

[942582-21-0]



R = $-C(CH_3)_2CH{=}CH_2$

$C_{29}H_{34}O_5$ 462.585
Constit. of the root bark of *Artocarpus petelotii*. Amorph. yellow powder. Mp 138-140°. λ_{max} 207 (log ϵ 4.47); 285 (log ϵ 3.86) (MeOH).

Shen, H. *et al., Heterocycles*, 2007, **71**, 1147-1154 (*Artopetelin H, struct*)

Artopetelin J **A-185**

[942582-23-2]

As Artopetelin I, A-176 with
R = $-CH(CH_3)C(CH_3){=}CH_2$

$C_{24}H_{26}O_5$ 394.466
Constit. of the stem bark of *Artocarpus petelotii*. Amorph. yellow powder. Mp 158-160°. $[\alpha]_D^{20}$ +1.4 (c, 0.38 in Me_2CO). λ_{max} 217 (log ϵ 4.24); 314 (log ϵ 4.17) (MeOH).

Shen, H. *et al., Heterocycles*, 2007, **71**, 1147-1154 (*Artopetelin J, struct*)

Artopetelin K **A-186**

[942582-24-3]

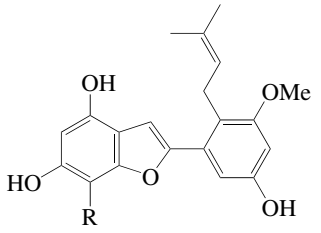
As Artopetelin H, A-184 with
R = $-CH(CH_3)C(CH_3){=}CH_2$

$C_{29}H_{34}O_5$ 462.585
Constit. of the root bark of *Artocarpus petelotii*. Amorph. yellow powder. Mp 119-120°. $[\alpha]_D^{20}$ +1.2 (c, 0.34 in Me_2CO). λ_{max} 207 (log ϵ 4.55); 288 (log ϵ 3.96) (MeOH).

Shen, H. *et al., Heterocycles*, 2007, **71**, 1147-1154 (*Artopetelin K, struct*)

Artopetelin L **A-187**

7-(1,2-Dimethyl-2-propenyl)-2-[5-hydroxy-2-(3-methyl-2-butenyl)-3-methoxyphenyl]-4,6-benzofurandiol [1163723-68-9]



R = $-CH(CH_3)C(CH_3){=}CH_2$

$C_{25}H_{28}O_5$ 408.493
Constit. of the stem bark of *Artocarpus petelotii*. Amorph. yellow powder. $[\alpha]_D^{20}$ + 2.7 (c, 0.11 in Me_2CO). λ_{max} 216 (log ϵ 4.18); 304 (log ϵ 3.88) (MeOH).

Shen, H. *et al., Nat. Prod. Res.*, 2008, **22**, 1451-1456 (*Artopetelin L, struct*)

Artopetelin M **A-188**

7-(1,1-Dimethyl-2-propenyl)-2-[5-hydroxy-2-(3-methyl-2-butenyl)-3-methoxyphenyl]-4,6-benzofurandiol [1163723-69-0]

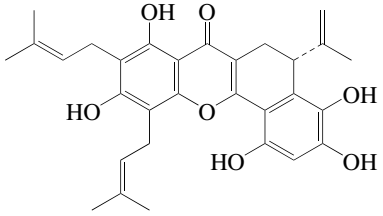
As Artopetelin L, A-187 with
R = $-C(CH_3)_2CH{=}CH_2$

$C_{25}H_{28}O_5$ 408.493
Constit. of the stem bark of *Artocarpus petelotii*. Amorph. yellow powder. λ_{max} 216 (log ϵ 4.01); 306 (log ϵ 3.78) (MeOH).

Shen, H. *et al., Nat. Prod. Res.*, 2008, **22**, 1451-1456 (*Artopetelin M, struct*)

Artorigidin A **A-189**

[1225288-90-3]



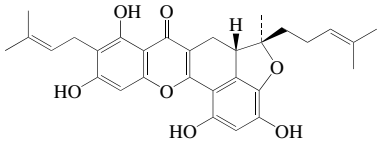
Absolute Configuration

$C_{30}H_{32}O_7$ 504.579
Constit. of the twigs of *Artocarpus rigida*. Cytotoxic to human colon cancer HT-29 cells. Amorph. yellow powder (hexane). $[\alpha]_D^{20}$ +80 (c, 0.2 in CH_2Cl_2). λ_{max} 230 (log ϵ 4.18); 266 (log ϵ 4.18); 278 (log ϵ 4.15); 368 (log ϵ 4.08) (CH_2Cl_2).

Ren, Y. *et al., J. Nat. Prod.*, 2010, **73**, 949-955 (*Artorigidin A, activity*)

Artorigidin B **A-190**

[1225288-91-4]



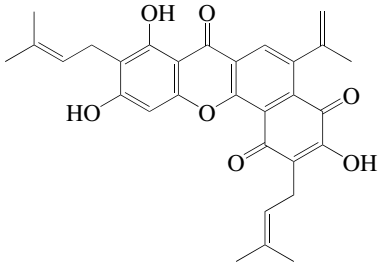
Absolute Configuration

$C_{30}H_{32}O_7$ 504.579
Constit. of the twigs of *Artocarpus ridiga*. Cytotoxic to human colon cancer HT-29 cells. Amorph. yellow powder (hexane). $[\alpha]_D^{20}$ +10 (c, 0.1 in CH_2Cl_2). λ_{max} 233 (log ϵ 4.33); 268 (log ϵ 4.42); 326 (log ϵ 4.18); 374 (log ϵ 4.3) (CH_2Cl_2).

Ren, Y. *et al., J. Nat. Prod.*, 2010, **73**, 949-955 (*Artorigidin B, activity*)

Artorigidin C **A-191**

[1225288-92-5]

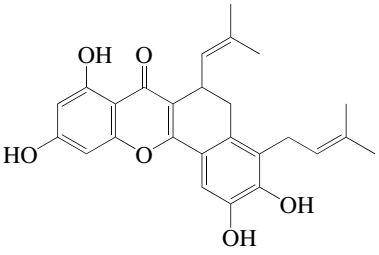


$C_{30}H_{28}O_7$ 500.547
Constit. of the twigs of *Artocarpus rigida*. Moderately cytotoxic to human colon cancer HT-29 cells. Amorph. red powder (hexane). λ_{max} 271 (log ϵ 4.52); 362 (log ϵ 3.78) (CH_2Cl_2).

Ren, Y. *et al., J. Nat. Prod.*, 2010, **73**, 949-955 (*Artorigidin C, activity*)

Artosimmin A-192

*5,6-Dihydro-2,3,8,10-tetrahydroxy-4-(3-methyl-2-buten-1-yl)-6-(2-methyl-1-propen-1-yl)-7*H*-benzo[c]xanthen-7-one, CAS* [1253589-99-9]



$C_{26}H_{26}O_6$ 434.488

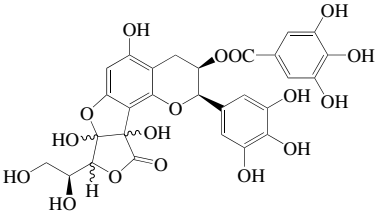
Constit. of *Artocarpus odoratissimus* and *Artocarpus kemando* stem barks. Antioxidant. Cytotoxic against cancer cell lines HL-60 and MCF-7. Free radical scavenger. Cryst. ($CHCl_3$/MeOH). Mp 213-215°. λ_{max} 213 (log ϵ 4.16); 271 (log ϵ 3.72); 340 (log ϵ 3.42) (MeOH).

Ee, G.C.L. *et al., Lett. Org. Chem.*, 2010, **7**, 240-244 (*Artocarpus odoratissimus constit, activity*)

Ee, G.C.L. *et al., Asian J. Chem.*, 2012, **24**, 231-234 (*Artocarpus kemando constit*)

8-*C*-Ascorbylepigallocatechin 3-*O*-gallate A-193

[126715-87-5]



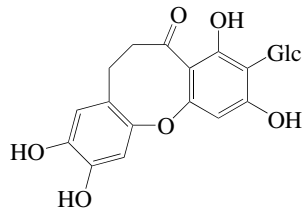
$C_{28}H_{24}O_{17}$ 632.487

Constit. of commercial oolong tea (*Camellia sinensis* var. *viridis*). Off-white amorph. powder + ½H_2O. $[\alpha]_D^{21}$-215.1 (c, 1.0 in Me_2CO).

Hashimoto, F. *et al., Chem. Pharm. Bull.*, 1989, **37**, 3255-3263 (*struct, ir, pmr, cmr*)

Aspalalinin A-194

[910252-00-5]



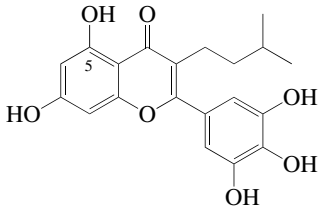
$C_{21}H_{22}O_{11}$ 450.398

Cyclised dihydrochalcone. Constit. of the leaves of *Aspalathus linearis*. Plates + ½H_2O (MeOH aq.). Mp 219-221°. $[\alpha]_D^{23}$+26.2 (c, 1 in MeOH).

Shimamura, N. *et al., Biol. Pharm. Bull.*, 2006, **29**, 1271-1274 (*Aspalalinin, cd, cryst struct*)

Asplenetin A-195

*5,7-Dihydroxy-3-(3-methylbutyl)-2-(3,4,5-trihydroxyphenyl)-4*H*-1-benzopyran-4-one, 9CI. 3′,4′,5,5′,7-Pentahydroxy-3-(3-methylbutyl)flavone* [97180-29-5]



$C_{20}H_{20}O_7$ 372.374

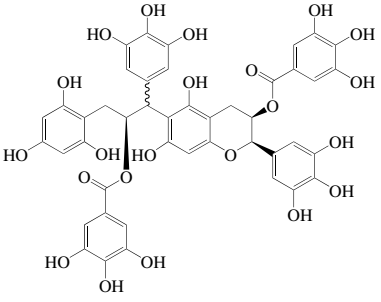
Constit. of *Launaea asplenifolia*. Yellow-orange cryst. (EtOH). Mp 240-243°.

5-O-[α-L-Rhamnopyranosyl-(1→2)-β-D-glucopyranoside]: [97165-53-2] *Asplenetin 5-neohesperidoside*
$C_{32}H_{40}O_{16}$ 680.658
From *Launaea asplenifolia*. Yellow-orange cryst. (EtOH). Mp 172-174°.

Gupta, D.R. *et al., Phytochemistry*, 1985, **24**, 873-875 (*Launaea asplenifolia constits*)

Assamicain C A-196

[121795-67-3]



$C_{44}H_{36}O_{22}$ 916.755

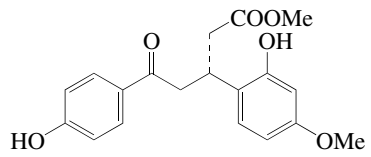
Derived from the leaves of *Camellia sinensis* var. *assamica*. Exhibits growth inhibition of H9 lymphocyte cells. Amorph. off-white powder + 5H_2O. $[\alpha]_D^{17}$+60.5 (c, 1.3 in Me_2CO).

Hashimoto, F. *et al., Chem. Pharm. Bull.*, 1989, **37**, 77-85 (*Camellia sinensis constit, struct, synth*)

Hashimoto, F. *et al., Bioorg. Med. Chem. Lett.*, 1996, **6**, 695-700 (*activity*)

Astradsurnin A-197

[1350451-34-1]



Absolute Configuration

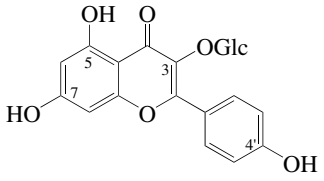
$C_{19}H_{20}O_6$ 344.363

Constit. of *Astragalus adsurgens* infected with *Embellisia astragali*. Amorph. yellow powder. $[\alpha]_D^{25}$-44 (c, 0.1 in $CHCl_3$). λ_{max} 216 (log ϵ 2.92) (MeOH).

Chen, J. *et al., Food Chem.*, 2012, **131**, 546-551 (*Astradsurnin*)

Astragalin A-198

3-O-β-D-Glucopyranosyloxy-4′,5,7-trihydroxyflavone. Kaempferol 3-glucoside [480-10-4]



$C_{21}H_{20}O_{11}$ 448.382

Present in red wine. Isol. from *Astragalus* spp. and many other plant spp. Immunostimulant. Shows strong antibacterial and anticandidal activity. Yellow needles. Mp 178°. $[\alpha]_D^{18}$+16.9 (c, 0.62 in MeOH). Log P-2.32 (calc).

▶ DJ3080000

3″-O-Sulfate: [85290-33-1]
$C_{21}H_{20}O_{14}S$ 528.447
Isol. from *Cystopteris fragilis.*

6″-O-Sulfate: [85290-34-2]
$C_{21}H_{20}O_{14}S$ 528.447
Isol. from *Cystopteris fragilis.*

7-O-Sulfate: [953384-46-8]
$C_{21}H_{20}O_{14}S$ 528.447
Constit. of *Gleichenia linearis.*

2″-Ac: [1206734-95-3] ***2″-O-Acetylastragalin***
$C_{23}H_{22}O_{12}$ 490.42
Constit. of *Delphinium staphisagria.* Yellow powder (MeOH aq.). Mp 152-153°. $[\alpha]_D^{20}$-76.2 (c, 0.04 in MeOH). λ_{max} 266 (log ϵ 4); 348 (log ϵ 3.9) (MeOH).

6″-Ac: [118169-27-0] ***6″-O-Acetylastragalin***
$C_{23}H_{22}O_{12}$ 490.42
Constit. of *Arnica chamissonis* and *Solidago* sp. λ_{max} 265; 300 (sh); 348 (MeOH).

Mono-Ac: [36310-43-7] ***Acetylastragalin***
$C_{23}H_{22}O_{12}$ 490.42
Isol. from *Senecio aureus* and *Glycyrrhiza glabra*. Full struct. not determined. May be identical with the 6″-Ac above.

3″,6″-Di-Ac: [743434-64-2] ***3″,6″-Di-O-acetylastragalin***
$C_{25}H_{24}O_{13}$ 532.457
Constit. of *Knoxia corymbosa*. Yellow needles.

6″-O-(2-Butenoyl): [139766-98-6] ***6″-O-Crotonylastragalin***
$C_{25}H_{24}O_{12}$ 516.457
Constit. of *Saussurea japonica*.

6″-O-Malonoyl: [81149-02-2] ***6″-Malonylastragalin***
$C_{24}H_{22}O_{14}$ 534.429
Constit. of *Bryum* sp., *Ceterach* sp., *Cicer* sp. andpears.

6″-O-*(4-Carboxy-3-hydroxy-3-methylbutanoyl):* [157407-84-6] *Kaempferol 3-[6*-O-*(3-hydroxy-3-methylglutaroyl)-glucoside]*. ***6″*-O-*(3-Hydroxy-3-methylglutaroyl)astragalin***
$C_{27}H_{28}O_{15}$ 592.509
Constit. of the leaves of *Polygala japonica* and callus cultures of *Citrus aurantifolia*. Yellow powder (MeOH). Mp 210-213°. λ_{max} 305 (log ϵ 4.2); 350 (log ϵ 4.3) (MeOH).

O*″-Benzoyl:* [27436-82-4] *Astragalin monobenzoate*
$C_{28}H_{24}O_{12}$ 552.49
Isol. from *Narcissus poeticus.*

O*″-(4-Hydroxybenzoyl):* [27321-64-8]
$C_{28}H_{24}O_{13}$ 568.49
Isol. from *Narcissus poeticus.*

2″-O-*(3,4,5-Trihydroxybenzoyl):* [76343-90-3] *Kaempferol 3-(2-galloylglucoside)*. ***2″*-O-*Galloylastragalin***
$C_{28}H_{24}O_{15}$ 600.489
Isol. from *Polygonum nodosum*. Yellow needles + 2½H_2O (MeOH aq.). Mp 227-229°. $[\alpha]_D$-84.3 (c, 1 in MeOH). λ_{max} 269 (ϵ 27400); 295 (sh); 345 (sh) (ϵ 16800) (MeOH).

4″-O-*(3,4,5-Trihydroxybenzoyl):* [1262839-26-8] *Kaempferol 3-(4-galloylglucoside)*. ***4″*-O-*Galloylastragalin***
$C_{28}H_{24}O_{15}$ 600.489
Constit. of the leaves of *Securinega virosa*. Amorph. yellow powder. $[\alpha]_D$-27 (c, 0.1 in MeOH).

6″-O-*(3,4,5-Trihydroxybenzoyl):* [56317-05-6] *Kaempferol 3-(6-galloylglucoside)*. ***6″*-O-*Galloylastragalin***
$C_{28}H_{24}O_{15}$ 600.489
Isol. from *Heuchera* spp.

2″,3″-Bis-O-*(3,4,5-trihydroxybenzoyl):* [875710-95-5] ***2″,3″-Di*-O-*galloylastragalin***
$C_{35}H_{28}O_{19}$ 752.595
Constit. of *Geranium pyrenaicum*. Amorph. powder. λ_{max} 269; 292 (sh) (MeOH).

2″,6″-Bis-O-*(3,4,5-trihydroxybenzoyl):* [197379-54-7] ***Loropetalin D***. *2″,6″-Di-galloylastragalin*
$C_{35}H_{28}O_{19}$ 752.595
Constit. of *Loropetalum chinense.* Yellow cryst. (MeOH aq.). λ_{max} 211 (broad); 267; 290 (sh); 347 (MeOH).

6″-O-*(Z-Cinnamoyl):* [134779-23-0] *Kaempferol 3-(6*-Z-*cinnamoylglucoside)*. ***6″*-O-cis-*Cinnamoylastragalin***
$C_{30}H_{26}O_{12}$ 578.528
Isol. from *Solanum elaeagnifolium*. Yellow cryst. (MeOH). Mp 208-209°. λ_{max} 267; 298 (sh); 315; 352 (sh) (MeOH).

2″-O-*(4-Hydroxy*-E-*cinnamoyl):* [137018-32-7] *Kaempferol 3-(2*-E-p-*coumaroylglucoside)*. ***2″*-O-trans-p-*Coumaroylastragalin***
$C_{30}H_{26}O_{13}$ 594.528
Isol. from leaves of cork oak (*Quercus suber*), *Eryngium campestre* and *Lithocarpus polystachya*.

2″-O-*(4-Hydroxy*-E-*cinnamoyl), 6″-Ac:* [351491-18-4] ***Dentatiflavonoid***
$C_{32}H_{28}O_{14}$ 636.565
Constit. of *Quercus dentata*. Powder.

3″-O-*(4-Hydroxy*-E-*cinnamoyl), 6″-Ac:* [557765-92-1]
$C_{32}H_{28}O_{14}$ 636.565
Constit. of *Scabiosa hymettia* and *Anaphalis aureo-punctata*. Yellow cryst. Mp > 162° dec. $[\alpha]_D^{20}$-25.4 (c, 2.8 in MeOH). $[\alpha]_D^{21}$-53 (c, 2.3 in MeOH). λ_{max} 267; 303 (sh); 313; 356 (MeOH).

4″-O-*(4-Hydroxy*-E-*cinnamoyl):* [350685-85-7] ***4″*-O-trans-p-*Coumaroylastragalin***. *Kaempferol 3-(4*-p-*coumaroylglucoside)*
$C_{30}H_{26}O_{13}$ 594.528
Constit. of *Elaeagnus bockii*. Pale yellow powder (MeOH). Mp 224-226°. λ_{max} 267 (log ϵ 4); 300 (sh); 315 (log ϵ 4.1) (MeOH).

6″-O-*(4-Hydroxy*-E-*cinnamoyl):* [20316-62-5] ***Tiliroside***. *6″*-O-trans-p-*Coumaroylastragalin*
$C_{30}H_{26}O_{13}$ 594.528
Isol. from *Tilia* spp. and other plant spp. such as *Eremocarpus setigerus.* Also from *Fragaria ananassa*. Insecticide, feeding deterrent. Shows weak antibacterial activity. Antiobesity agent. Pale yellow needles (MeOH aq.). Mp 269-271°. $[\alpha]_D^{26}$-62 (c, 0.28 in MeOH). This struct. was formerly assigned to Tribuloside isol. from *Tribularia* spp.

▶ UD3375250

2″-O-*(4-Hydroxy*-Z-*cinnamoyl):* [189098-16-6] *2″*-O-cis-p-*Coumaroylastragalin*
$C_{30}H_{26}O_{13}$ 594.528
Constit. of *Eryngium campestre.*

2″-O-*(4-Hydroxy*-Z-*cinnamoyl), 6″*-O-*(4-hydroxy*-E-*cinnamoyl):* [137120-98-0]
$C_{39}H_{32}O_{15}$ 740.673
Constit. of *Quercus pubescens.*

3″-O-*(4-Hydroxy*-Z-*cinnamoyl), 6″*-O-*(4-hydroxy*-E-*cinnamoyl), 2″,4″-di-Ac:* [1309660-48-7]
$C_{43}H_{36}O_{17}$ 824.747
Constit. of the leaves of *Quercus dentata*. Yellow powder. λ_{max} 265; 314 (MeOH).

4″-O-*(4-Hydroxy*-Z-*cinnamoyl), 6″*-O-*(4-hydroxy*-E-*cinnamoyl), 2″,3″-di-Ac:* [137018-29-2]
$C_{43}H_{36}O_{17}$ 824.747
Isol. from cork oak (*Quercus suber*) leaves.

6″-O-*(4-Hydroxy*-Z-*cinnamoyl):* [163956-16-9] *6″*-O-cis-p-*Coumaroylastragalin*. **cis-*Tiliroside***
$C_{30}H_{26}O_{13}$ 594.528
Isol. from *Fragaria ananassa*. $[\alpha]_D^{26}$-57 (c, 0.04 in MeOH). λ_{max} 208 (sh) (log ϵ 4.4); 227 (log ϵ 4.3); 267 (log ϵ 4.4); 315 (log ϵ 4.5) (MeOH).

6″-O-*(4-Hydroxy*-Z-*cinnamoyl), 2″*-O-*(4-hydroxy*-E-*cinnamoyl), 3″,4″-di-Ac:* [1309660-47-6]
$C_{43}H_{36}O_{17}$ 824.747
Constit. of the leaves of *Quercus dentata*. Yellow powder. λ_{max} 268; 314 (MeOH).

3″-O-*(4-Hydroxycinnamoyl):* [74712-68-8] ***3″*-O-p-*Coumaroylastragalin***
$C_{30}H_{26}O_{13}$ 594.528
Isol. from *Larix leptolepis* and *Picea obovata*.

4′-O-*(4-Hydroxycinnamoyl):* [80382-24-7] *Kaempferol 3-glucoside 4′-(*p-*hydroxycinnamate)*. ***Cephacoside***
$C_{30}H_{26}O_{13}$ 594.528
Isol. from *Cephalaria* sp.

6″-O-*(4-Hydroxycinnamoyl), 4″-Ac:* [115651-95-1] *Kaempferol 3-(4-acetyl-6*-p-*coumaroylglucoside)*. *4″*-O-*Acetyl-6″*-O-p-*coumaroylastragalin*
$C_{32}H_{28}O_{14}$ 636.565
Isol. from *Quercus cerris.* Cryst. (MeOH aq.). Mp 170° dec. $[\alpha]_D^{20}$-65.7 (c, 2.3 in MeOH).

6″-O-*(4-Hydroxycinnamoyl), mono-Ac:* [58924-37-1]
$C_{32}H_{28}O_{14}$ 636.565
Isol. from *Anaphalis contorta*.

7-O-*(4-Hydroxycinnamoyl):* [51795-36-9]
$C_{30}H_{26}O_{13}$ 594.528
Constit. of *Elaeagnus angustifolia* and *Elaeagnus argentea.*

2″,4″-Bis-O-*(4-hydroxycinnamoyl):* [85122-24-3]
$C_{39}H_{32}O_{15}$ 740.673
Isol. from *Quercus ilex*. Needles (MeOH aq.). Dec. above 280°.

2″,4″-Bis-O-*(4-Hydroxycinnamoyl), 3″,6″-di*-O-*Ac:* [94474-72-3]
$C_{43}H_{36}O_{17}$ 824.747
Constit. of leaves of *Quercus ilex*. Needles (MeOH aq.). Mp 280° dec.

2″,6″-Bis-O-*(4-hydroxy*-E-*cinnamoyl):* [121651-61-4] [94474-74-5]
$C_{39}H_{32}O_{15}$ 740.673
Constit. of *Quercus dentata*, *Quercus suber* and *Quercus ilex*. Mp 180-182°. $[\alpha]_D^{25}$-162 (c, 0.39 in MeOH). Isol. as a mixt. of double bond isomers. λ_{max} 268; 315; 355 (sh) (MeOH).

2″,6″-Bis-O-*(4-hydroxy*-E-*cinnamoyl), 3″,4″-di-Ac:* [137018-33-8] *Kaempferol 3-(3,4-diacetyl-2,6-di*-p-*coumaroylglucoside)*
$C_{43}H_{36}O_{17}$ 824.747
Constit. of *Quercus dentata* and *Quercus suber.* Yellow powder. λ_{max} 268; 315; 355 (sh) (MeOH).

3″,6″-Bis-O-*(4-hydroxy*-E-*cinnamoyl):* [68170-25-2] *Kaempferol 3-(3,6-di*-p-*coumaroylglucoside)*
$C_{39}H_{32}O_{15}$ 740.673
Isol. from *Aerva lanata.*

3″,6″-Bis-O-*(4-hydroxy*-Z-*cinnamoyl):* [218614-71-2] ***Stenopalustroside A***
$C_{39}H_{32}O_{15}$ 740.673
Constit. of *Stenochlaena palustris.* Shows weak antibacterial activity. Amorph. yellow powder. $[\alpha]_D^{20}$-26 (c, 0.19 in MeOH). λ_{max} 269; 315 (MeOH).

3″,6″-Bis-O-*(4-hydroxycinnamoyl)(3″*E*,6″*Z*-):* [218614-52-9] ***Stenopalustroside D***
$C_{39}H_{32}O_{15}$ 740.673
Constit. of *Stenochlaena palustris.* Obt. as a mixt. with Stenopolustroside C.

3″,6″-Bis-O-*(4-hydroxycinnamoyl)(3″Z,6″*E-*):* [218614-18-7] ***Stenopalustroside C***. Constit. of *Stenochlaena palustris.* Shows weak antibacterial activity. Obt. as a mixture with Stenopalustroside D.

6″-O-*(4-Methoxy*-E-*cinnamoyl):* [1192480-91-3]
$C_{31}H_{28}O_{13}$ 608.554
Constit. of *Spiraea canescens.* Yellowish gum. $[\alpha]_D^{25}$-30 (c, 0.04 in MeOH). λ_{max} 197 (log ϵ 5.03); 222 (log ϵ 3.9); 268 (log ϵ 3.9); 312 (log ϵ 3.9) (MeOH).

6″-O-*(3,4-Dihydroxy*-E-*cinnamoyl):* [190328-43-9] *6″*-O-*Caffeoylastragalin*
$C_{30}H_{26}O_{14}$ 610.527
Constit. of young bracken fronds (*Pteridium aquilinium*).

2″-O-*(4-Methoxy*-E-*cinnamoyl), 6″*-O-*(4-hydroxy*-E-*cinnamoyl):* [1039149-02-4]
$C_{40}H_{34}O_{15}$ 754.7
Constit. of *Eryngium yuccifolium*. Yellow powder. $[\alpha]_D^{25}$-63.9 (c, 0.5 in MeOH). λ_{max} 218 (log ϵ 4.76); 267 (log ϵ 4.59); 316 (log ϵ 4.43) (MeOH).

3″-O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl):* [850537-28-9] *Kaempferol 3-(3-feruloylglucoside)*. *3″*-O-*Feruloylastragalin*
$C_{31}H_{28}O_{14}$ 624.554
Constit. of *Picea abies.* Mp 178-181°.

4″-O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl), 2″*-O-*(4-hydroxy*-Z-*cinnamoyl), 3″,6″-di-Ac:* [1174172-69-0] ***Quercuside B***
$C_{44}H_{38}O_{18}$ 854.773
Constit. of *Quercus incana*. Viscous solid. $[\alpha]_D^{25}$-113.5 (c, 0.06 in MeOH). λ_{max} 220; 260; 320 (MeOH).

6″-O-*(4-Hydroxy-3-methoxycinnamoyl):* [69200-62-0] *Kaempferol 3-(6-feruloylglucoside)*. *6″*-O-*Feruloylastragalin*
$C_{31}H_{28}O_{14}$ 624.554
Constit. of the leaves of *Polylepis incana*.

6″-O-*(4-Hydroxy-3-methoxycinnamoyl), 3″*-O-*(4-hydroxycinnamoyl):* [69200-63-1]
$C_{40}H_{34}O_{16}$ 770.699
Isol. from *Picea obovata*. Mp 168-171°. $[\alpha]_D^{20}$-32.3 (c, 0.93 in Me_2CO).

6″-O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl), 3″*-O-*(4-hydroxy*-Z-*cinnamoyl):* [218613-80-0] ***Stenopalustroside B***
$C_{40}H_{34}O_{16}$ 770.699
Constit. of *Stenochlaena palustris.* Shows weak antibacterial activity. Amorph. yellow powder. $[\alpha]_D^{20}$-18 (c, 0.2 in MeOH). λ_{max} 268; 314 (MeOH).

7-O-*(4-Hydroxy-3-methoxy*-E-*cinnamoyl), 2″,6″-di-Ac:* [1174172-68-9] ***Quercuside A***
$C_{35}H_{32}O_{16}$ 708.628
Constit. of *Quercus incana*. Viscous solid. $[\alpha]_D^{25}$-74.5 (c, 0.07 in MeOH). λ_{max} 203; 270; 318 (MeOH).

[94535-60-1]

Schoensiegel, I. *et al., Z. Naturforsch., B*, 1969, **24**, 1213-1214 (*Narcissus poeticus constits*)

Karrer, W. *et al., Konstitution und Vorkommen der Organischen Pflanzenstoffe, 2nd edn., Birkhuser Verlag*, no. 1498, 1972, (*occur*)

Dembinska-Migas, W. *et al., Pol. J. Pharmacol. Pharm.*, 1973, **25**, 599-606 (*7-Coumaroylastragalin*)

Markham, K.R. *et al., Tetrahedron*, 1978, **34**, 1389-1397 (*cmr*)

Wells, E.F. *et al., Can. J. Bot.*, 1980, **58**, 1459-1463 (*6″-Galloylastragalin*)

Zapesochnaya, G.G. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1980, **16**, 141-145 (*3″-coumaroyl, 6″-coumaroyl, isol, struct*)

Isobe, T. *et al., Phytochemistry*, 1980, **19**, 1877 (*2″-Galloylastragalin*)

Romussi, G. *et al., Annalen*, 1981, 761-764 (*Tiliroside, isol*)

Imperato, F. *et al., Chem. Ind. (London)*, 1981, 695-696 (*6″-Malonylastragalin, struct*)

Vermes, B. *et al., Helv. Chim. Acta*, 1981, **64**, 1964-1967 (*Tiliroside*)

Aliev, A.M. *et al., CA*, 1982, **97**, 88682k (*Cephacoside*)

Romussi, G. *et al., Annalen*, 1983, 334-335 (*2″,4″-dicoumaroyl, struct*)

Imperato, F. *et al., Chem. Ind. (London)*, 1983, 204-205 (*3″-sulfate, 6″-sulfate, struct*)

Romussi, G. *et al., Annalen*, 1984, 1864-1866 (*2″,4″-dicoumaroyl 3″,6″-di-Ac, struct*)

Romussi, G. *et al., Annalen*, 1984, 1867-1868 (*2″,6″-dicoumaroyl, struct*)

Zapesochnaya, G.G. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 1984, **20**, 547-553 (*3″-coumaroyl, 6″-coumaroyl, ms*)

Piegay, I. *et al., Pharmazie*, 1986, **41**, 524-525 (*Acetylastragalin*)

Romussi, G. *et al., Annalen*, 1988, 989-991 (*4″-Acetyl-6″-coumaroylastragalin*)

Merfort, I. *et al., Phytochemistry*, 1988, **27**, 3281-3284 (*6″-O-Acetylastragalin*)

Yamashita, N. *et al., Agric. Biol. Chem.*, 1989, **53**, 1383-1385 (*2″,6″-Dicoumaroylastragalin*)

Romussi, G. *et al., Arch. Pharm. (Weinheim, Ger.)*, 1991, **324**, 519-524 (*Quercus dicoumarates*)

Yang, D. *et al., CA*, 1991, **115**, 228326q (*4-hydroxycinnamoyl esters*)

Chiale, C.A. *et al., Phytochemistry*, 1991, **30**, 1042-1043 (*6″-cis-*Cinnamoylastragalin)

Shi, J. *et al., CA*, 1992, **116**, 148212e (*6″-Crotonoylastragalin*)

Jung, K.Y. *et al., Phytochemistry*, 1993, **34**, 1196-1197 (*Polygala hydroxymethylglutarate*)

The Flavonoids: Advances in Research Since 1986, (ed. Harborne, J.B.), Chapman & Hall, 1993,

Berhow, M.A. *et al., Phytochemistry*, 1994, **36**, 1225-1227 (*Citrus hydroxymethylglutarate*)

Catalano, S. *et al., Phytochemistry*, 1994, **37**, 1777-1778 (*6″-Feruloylastragalin*)

Imperato, F. *et al., Phytochemistry*, 1997, **45**, 199-200 (*6″-Caffeoylastragalin*)

Liu, Y. *et al., Phytochemistry*, 1997, **46**, 389-391 (*Loropetalin D*)

Hohmann, J. *et al., Planta Med.*, 1997, **63**, 96 (*2″-cis-Coumaroylastragalin*)

Afifi, M.S. *et al., Bull. Fac. Pharm. (Cairo Univ.)*, 1999, **37**, 119-124 (*Astragalin, isol, antimicrobial activity*)

Liu, H. *et al., J. Nat. Prod.*, 1999, **62**, 70-75 (*Stenopalustrosides*)

Zhou, Y.-J. *et al., Indian J. Chem., Sect. B*, 2001, **40**, 394-398 (*Dentatiflavonoid*)

Cao, S.-G. *et al., Nat. Prod. Lett.*, 2001, **15**, 1-8 (*4″-Coumaroylastragalin*)

Wu, Y.Q. *et al., Chin. Chem. Lett.*, 2003, **14**, 66-67 (*3″-acetyl 6″-coumaroyl*)

Wang, Y.B. *et al., Chin. Chem. Lett.*, 2003, **14**, 1268-1270 (*3″,6″-Diacetylastragalin*)

Tsukamoto, S. *et al., J. Nat. Prod.*, 2004, **67**, 1839-1841 (*Tiliroside, cis-*Tiliroside)

Artemkina, N.A. *et al., Rastit. Resur.*, 2005, **41**, 105-111 (*3″-Feruloylastragalin*)

Ercil, D. *et al., Turk. J. Chem.*, 2005, **29**, 437-443 (*2″,3″-Digalloylastragalin*)

Ninomiya, K. *et al., Bioorg. Med. Chem. Lett.*, 2007, **17**, 3059-3064 (*Tiliroside, antiobestity activity*)

Jubahar, J. *et al., CA*, 2007, **147**, 483015k (*7-sulfate*)

Christopoulou, C. *et al., Chem. Biodiversity*, 2008, **5**, 318-323 (*Scabiosa hymettia coumarate*)

Diaz, J.G. *et al., Phytochem. Lett.*, 2008, **1**, 125-129 (*2″-Acetylastragalin*)

Zhang, Z. *et al., Phytochemistry*, 2008, **69**, 2070-2080 (*Eryngium dicoumarate*)

Wu, H. *et al., Food Chem.*, 2009, **115**, 592-595 (*Allium ursinum constits*)

Iftikhar, B. *et al., Magn. Reson. Chem.*, 2009, **47**, 605-608 (*Quercusides A,B*)

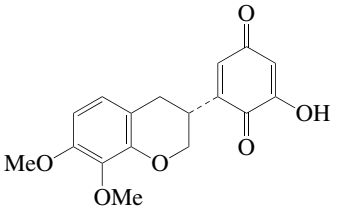
Sanogo, R. *et al., Nat. Prod. Commun.*, 2009, **4**, 1645-1650 (*4″-Galloylastragalin*)

Choudhary, M.I. *et al., Phytochemistry*, 2009, **70**, 1467-1473 (*Kaempferol 3-(4-p-coumaroylglucoside)*)

Wang, L.-L. *et al., Nat. Prod. Commun.*, 2010, **5**, 1597-1599 (*Quercus dentata constits*)

Astragaluquinone A-199

*2-(3,4-Dihydro-7,8-dimethoxy-2*H-*1-benzopyran-3-yl)-6-hydroxy-2,5-cyclohexadiene-1,4-dione*



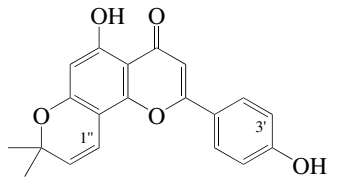
$C_{17}H_{16}O_6$ 316.31

(R)-form [158991-20-9]
Constit. of the roots of *Astragalus alexandrinus* (Fabaceae). Exhibits antimicrobial activity against *Bacillus subtilis, Staphylococcus aureus, Mycobacterium luteus* and *Saccharomyces cerevisiae*. Orange-red prisms (C_6H_6/petrol). Mp 125-126°. $[\alpha]_D^{25}$-55 (c, 0.65 in $CHCl_3$). λ_{max} 207; 267; 286 (sh) (MeOH). λ_{max} 207; 267 (MeOH) (Berdy). λ_{max} 211; 263; 393 (MeOH/NaOH) (Berdy).

El-Sebakhy, N.A. *et al., Phytochemistry*, 1994, **36**, 1387-1389 (*Astragaluquinone, cd, struct, activity*)

Atalantoflavone A-200

*5-Hydroxy-2-(4-hydroxyphenyl)-8,8-dimethyl-4*H,*8*H-*benzo[1,2-*b*:3,4-*b*′]dipyran-4-one, 9CI. Limonianin* [119309-02-3]



$C_{20}H_{16}O_5$ 336.343

Constit. of *Atalantia racemosa*, *Citrus limon*, *Severinia buxifolia*, *Ulex europaeus* ssp. *europaeus*, *Poncirus trifoliata*, *Citrus medica* var. *sarcodactylis* and *Erythrina vogelii*. Exhibits anti-HIV props. and inhibits NO production in murine microglial BV2 cells. Yellow needles (Me_2CO/hexane). Mp 289-290° (275-277°). Physical data varies between Atalantoflavone and Limonianin. λ_{max} 233 (log ϵ 4.51); 277 (log ϵ 4.45); 312 (log ϵ 4.42); 328 (sh) (log ϵ 4.27) (MeOH).

Di-Ac:
Needles (Me_2CO/petrol). Mp 230-232° (221-223°).

4′-Me ether: [1205687-49-5] ***4′-O-Methylatalantoflavone***
$C_{21}H_{18}O_5$ 350.37
Constit. of *Severinia buxifolia*. Yellow oil. λ_{max} 231; 276; 312; 326 (sh); 360 (sh) (MeOH aq.).

Di-Me ether:
Pale yellow cryst. (Me_2CO/hexane). Mp 207-209° (185-188°).

3′-Hydroxy: [697234-27-8] ***Artochamin C***
$C_{20}H_{16}O_6$ 352.343
Constit. of the roots of *Artocarpus chama*. Cytotoxic. Exhibits cytotoxicity against human epidermoid carcinoma KB,melanoma SK-MEL-2 and ovarian carcinoma 1A9 cells. Amorph. yellow powder. λ_{max} 236 (log ϵ 4.42); 272 (log ϵ 4.37); 344 (log ϵ 4.17) (MeOH).

5-Deoxy, 4′-Me ether: [1020409-03-3] *2-(4-Methoxyphenyl)-8,8-dimethyl-4*H,*8*H-*benzo[1,2-*b*:3,4-*b*′]dipyran-4-one*
$C_{21}H_{18}O_4$ 334.371
Constit. of the roots of *Lonchocarpus montanus*. Amorph. solid.

3′-Methoxy: [106055-12-3] ***Racemoflavone***
$C_{21}H_{18}O_6$ 366.37
Constit. of *Atalantia racemosa*. Yellow cryst. (Me_2CO/hexane). Mp 236-237°. λ_{max} 236 (log ϵ 4.13); 274 (log ϵ 4.07); 338 (log ϵ 3.9) (MeOH).

1″,2″-Dihydro, 2″ξ-hydroxy, 1″-oxo: [1333901-50-0]
$C_{20}H_{16}O_7$ 368.342
Constit. of the bark of *Poncirus trifoliata*. Anti-HIV agent. Yellow powder. $[\alpha]_D^{22}$-8.1 (c, 0.12 in MeOH). λ_{max} 211 (log ϵ 4.02); 226 (log ϵ 4.05); 269 (log ϵ 3.97); 284 (log ϵ 3.98); 321 (log ϵ 4.04) (MeOH).

*1″,2″-Dihydro, 1″*R**,2″*R**-dihydroxy:* [1333901-47-5]
$C_{20}H_{18}O_7$ 370.358
Constit. of the bark of *Poncirus trifoliata*. Yellow powder. $[\alpha]_D^{22}$-13.8 (c, 0.12 in MeOH). Possesses *cis*-config. λ_{max} 202 (log ϵ 4.38); 216 (log ϵ 4.37); 271 (log ϵ 4.09); 333 (log ϵ 4.14) (MeOH).

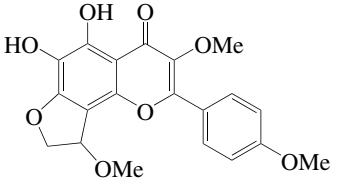
1″,2″-Dihydro, 1″ξ,2″ξ-dihydroxy:
$C_{20}H_{18}O_7$ 370.358
Constit. of *Retama raetum* and *Rodgersia sambucifolia*. λ_{max} 270; 317 (sh); 339 (MeOH).

*1″,2″-Dihydro, 1″*R**-ethoxy, 2″*R**-hydroxy:* [1333901-54-4]
$C_{22}H_{22}O_7$ 398.412
Constit. of the bark of *Poncirus trifoliata*. Yellow powder. $[\alpha]_D^{22}$-24.3 (c, 0.12 in MeOH). Possesses *cis*-config. λ_{max} 217 (log ϵ 4.21); 274 (log ϵ 3.94); 285 (log ϵ 3.93); 303 (log ϵ 3.94); 329 (log ϵ 3.97) (MeOH).

Banerji, A. *et al., Phytochemistry*, 1988, **27**, 3637-3640 (*Atalantoflavone, Racemoflavone, synth, struct*)
Chang, S.-H. *et al., Phytochemistry*, 1990, **29**, 351-353 (*Limonianin*)
Banerji, A. *et al., Spectrosc. Lett.*, 1990, **23**, 555-565 (*pmr, struct*)
Subramanian, M. *et al., J. Nat. Prod.*, 1992, **55**, 1213-1229 (*Atalantoflavone, synth*)
Vijayalakshmi, C.S. *et al., Z. Naturforsch., B*, 1992, **47**, 1021-1025 (*synth*)
Prasad, K.J.R. *et al., J. Nat. Prod.*, 1993, **56**, 208-214 (*synth*)
Kassem, M. *et al., Fitoterapia*, 2000, **71**, 649-654 (*1″,2″-dihydrodihydroxy*)
Wang, Y.-H. *et al., J. Nat. Prod.*, 2004, **67**, 757-761 (*Artochamin C, activity*)
Magalhaes, A.F. *et al., An. Acad. Bras. Cienc.*, 2007, **79**, 351-367 (*5-deoxy 4′-Me ether*)
Chan, Y.-Y. *et al., Chem. Pharm. Bull.*, 2010, **58**, 61-65 (*Citrus medica constit, activity*)
Feng, T. *et al., Chem. Pharm. Bull.*, 2010, **58**, 971-975 (*Poncirus trifoliata constit, activity*)
Bacher, M. *et al., Magn. Reson. Chem.*, 2010, **48**, 83-88 (*Severinia buxifolia constits*)

Atanasin A-201

[119248-62-3]

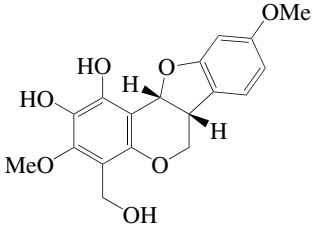


$C_{20}H_{18}O_8$ 386.357
Constit. of *Brickellia squarrosa*. Cryst. Mp 220-221°.

Flores, S.E. *et al., Chem. Ind. (London)*, 1960, 291 (*Atanasin, struct*)

Atricarpan A A-202

1,2-Dihydroxy-4-hydroxymethyl-3,9-dimethoxypterocarpan [928761-78-8]

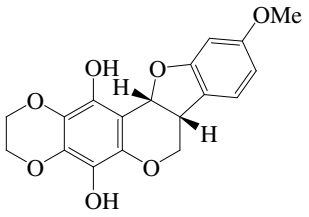


$C_{18}H_{18}O_7$ 346.336
Constit. of *Zygophyllum atriplicoides*. Butyrylcholinesterase and lipoxygenase inhibitor. Gum. $[\alpha]_D^{25}$-107 (c, 0.04 in MeOH). λ_{max} 209; 239; 304 (MeOH).

Ahmad, V.U. *et al., Chem. Biodiversity*, 2006, **3**, 996-1003 (*Atricarpan A*)

Atricarpan B A-203

2,3-Ethylenedioxy-1,4-dihydroxy-9-methoxypterocarpan [928761-79-9]

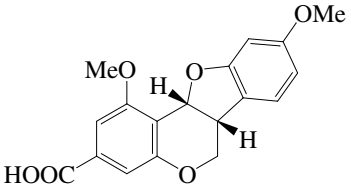


$C_{18}H_{16}O_7$ 344.32
Constit. of *Zygophyllum atriplicoides*. Butyrylcholinesterase inhibitor. Gum. $[\alpha]_D^{25}$-130 (c, 0.1 in MeOH). λ_{max} 208; 238; 303 (MeOH).

Ahmad, V.U. *et al., Chem. Biodiversity*, 2006, **3**, 996-1003 (*Atricarpan B*)

Atricarpan C A-204

3-Carboxy-1,9-dimethoxypterocarpan. 1,9-Dimethoxypterocarpan-3-carboxylic acid [928761-80-2]

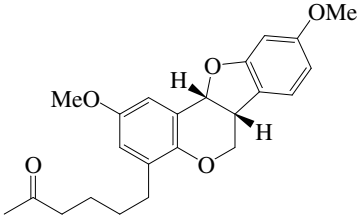


$C_{18}H_{16}O_6$ 328.321
Constit. of *Zygophyllum atriplicoides*. Butyrylcholinesterase inhibitor. Gum. $[\alpha]_D^{25}$-180 (c, 0.1 in MeOH). λ_{max} 207; 237; 304 (MeOH).

Ahmad, V.U. *et al., Chem. Biodiversity*, 2006, **3**, 996-1003 (*Atricarpan C*)

Atricarpan D A-205

2,9-Dimethoxy-4-(5-oxohexyl)pterocarpan [928761-81-3]

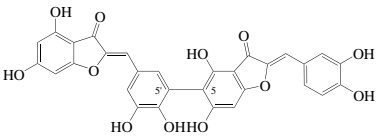


$C_{23}H_{26}O_5$ 382.455
Constit. of *Zygophyllum atriplicoides*. Butyrylcholinesterase and lipoxygenase inhibitor. Gum. $[\alpha]_D^{25}$-160 (c, 0.1 in MeOH). λ_{max} 208; 238; 303 (MeOH).

Ahmad, V.U. *et al., Chem. Biodiversity*, 2006, **3**, 996-1003 (*Atricarpan D*)

Aulacomniumbiaureusidin **A-206**

5,5′-Bi[3′,4,4′,6-tetrahydroxyaurone].
5,5′-Biaureusidin [169238-34-0]

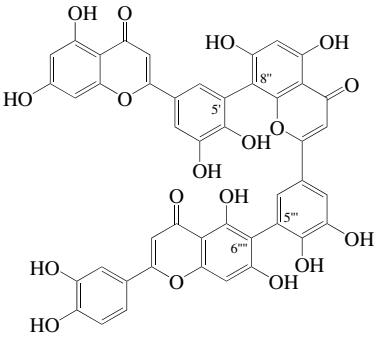


$C_{30}H_{18}O_{12}$ 570.465
Constit. of *Aulacomnium androgynum* and *Aulacomnium palustre*. λ_{max} 265; 411 (MeOH).

Hahn, H. *et al., Phytochemistry*, 1995, **40**, 573-576 (*Aulacomniumbiaureusidin, struct*)

Aulacomniumtriluteolin **A-207**

3′,4′,5,7-Tetrahydroxyflavone-(5′→8)-3′,4′,5,7-tetrahydroxyflavone-(5′→6)-3′,4′,5,7-tetrahydroxyflavone.
5′,8″:5‴,6‴′-Triluteolin [169238-35-1]

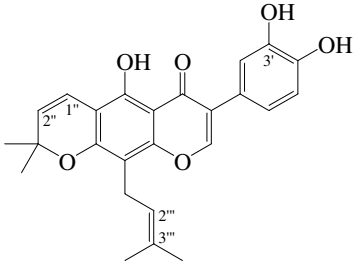


$C_{45}H_{26}O_{18}$ 854.69
Constit. of gametophytes of *Aulacomnium palustre*. λ_{max} 268 (sh); 346 (MeOH).

Hahn, H. *et al., Phytochemistry*, 1995, **40**, 573-576 (*Aulacomniumtriluteolin, struct*)

Auriculasin **A-208**

*7-(3,4-Dihydroxyphenyl)-5-hydroxy-2,2-dimethyl-10-(3-methyl-2-butenyl)-2*H*,6*H*-benzo[1,2-*b*:5,4-*b*′]dipyran-6-one.*
Cudraisoflavone A [60297-37-2]



$C_{25}H_{24}O_6$ 420.461
Flavonoid numbering shown. Constit. of *Millettia auriculata*, *Cudrania cochinchinensis*, *Flemingia philippinensis*, *Millettia taiwaniana* and *Erythrina eriotriocha*. Exhibits cytotoxicity against HepG2, A549 and MCF-7 cells. Antiestrogen. Yellow needles (EtOH). Mp 176-178°. λ_{max} 204 (ϵ 4850); 290 (ϵ 69000) (MeOH) (Berdy). λ_{max} 202 (ϵ 87000); 224 (ϵ 18200); 290 (ϵ 85500) (EtOH) (Berdy).

Tri-Ac: [60297-40-7]
Mp 174-176°.

3′-Me ether: [133830-92-9] ***Flemiphilippinin C***
$C_{26}H_{26}O_6$ 434.488
Constit. of the root of *Flemingia philippinensis*. Light yellow cryst (MeOH aq.). Mp 143-145°.

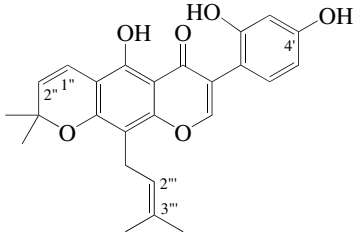
Tri-Me ether: [60297-39-4]
Cryst. (EtOH). Mp 120-121°.

3‴-Hydroxy, 1″,2″,2‴,3‴-tetrahydro, 3′,4′-di-Me ether: [78876-31-0] *7-(3,4-Dimethoxyphenyl)-3,4-dihydro-5-hydroxy-10-(3-hydroxy-3-methylbutyl)-2,2-dimethyl-2*H*,6*H*-benzo[1,2-*b*:5,6-*b*′]dipyran-6-one,* 9CI
$C_{27}H_{32}O_7$ 468.546
Constit. of leaves of *Millettia pachycarpa*. Cryst. (EtOAc/petrol). Mp 140°.

Minhaj, N. *et al., Tetrahedron*, 1976, **32**, 749-751 (*Millettia auriculata constit*)
Gupta, R.C. *et al., JOC*, 1978, **43**, 3446-3449 (*synth*)
Singhal, A.K. *et al., Phytochemistry*, 1981, **20**, 803-806 (*Millettia pachycarpa constit*)
Barua, P. *et al., Tet. Lett.*, 1983, **24**, 5801-5804 (*synth*)
Sun, N.-J. *et al., Phytochemistry*, 1988, **27**, 951-952 (*Cudrania cochinchinensis constit*)
Nkengfack, A.E. *et al., Phytochemistry*, 1989, **28**, 2522-2526 (*Erythrina eriotriocha constit*)
Chen, M. *et al., Yaoxue Xuebao*, 1991, **26**, 42-48 (*Flemiphilippin C*)
Ahn, E.-M. *et al., Biol. Pharm. Bull.*, 2004, **27**, 548-553 (*activity*)
Furukawa, H. *et al., J. Nat. Prod.*, 2004, **67**, 1125-1130 (*Millettia taiwaniana constit*)
Fu, M. *et al., Helv. Chim. Acta*, 2012, **95**, 598-605 (*Flemingia philippinensis constit, activity*)

Auriculatin **A-209**

*7-(2,4-Dihydroxyphenyl)-5-hydroxy-2,2-dimethyl-10-(3-methyl-2-butenyl)-2*H*,6*H*-benzo[1,2-*b*:5,4-*b*′]dipyran-6-one,* 9CI [20387-73-9]



$C_{25}H_{24}O_6$ 420.461
Flavonoid numbering shown. Constit. of *Millettia auriculata*, *Erythrina bidwillii*, *Erythrina senegalensis* and *Pueraria lobata*. Cryst. (MeOH aq.). Mp 236-239°. λ_{max} 275 (MeOH) (Berdy).

4′-O-β-D-Glucopyranoside: [139051-60-8]
Auriculatin 4′-glucoside
$C_{31}H_{34}O_{11}$ 582.603
Constit. of the stem bark of *Erythrina eriotricha*. Yellow oil. Mp 198-200° (as hexa-Ac).

Tri-Ac:
Cryst. (EtOH). Mp 123-124°.

4′-Me ether: [30431-68-6] ***Auriculin***†
$C_{26}H_{26}O_6$ 434.488
Constit. of *Millettia auriculata*. Yellow needles. Mp 124-125°.

2‴,3‴-Epoxide: [155661-17-9] ***Erysenegalensein F***
$C_{25}H_{24}O_7$ 436.46
Constit. of the stem bark of *Erythrina senegalensis*. Brown cryst. (cyclohexane). Mp 150°. $[\alpha]_D^{20}$ +7.5 (c, 0.78 in $CHCl_3$).

2,3-Dihydro: [105594-10-3] ***2,3-Dihydroauriculatin***
$C_{25}H_{26}O_6$ 422.477
From *Erythrina senegalensis* and *Ormosia monosperma*. Yellow powder (Me_2CO). Mp 100°. $[\alpha]_D^{22}$0 (c, 0.017 in MeOH). λ_{max} 275 (ϵ 52480) (MeOH) (Berdy).

2,3-Dihydro, 2′-Me ether: ***2,3-Dihydro-2′-O-methylauriculatin***
$C_{26}H_{28}O_6$ 436.504
Constit. of the stem bark of *Erythrina variegata*. Yellow oil. $[\alpha]_D^{20}$ +7.6 (c, 0.1 in MeOH). λ_{max} 269 (log ϵ 4.48); 275 (log ϵ 4.49); 312 (log ϵ 3.9) (MeOH).

1″,2″-Dihydro, 2″-hydroxy: [156162-08-2] ***Erysenegalensein I***
$C_{25}H_{26}O_7$ 438.476
Constit. of the stem bark of *Erythrina senegalensis*. Brown oil. $[\alpha]_D^{20}$ +26.8 (c, 0.01 in $CHCl_3$). Diag. incorrect in ref.

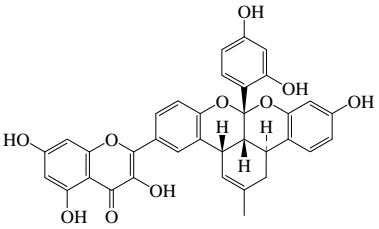
1″,2″,2‴,3‴-Tetrahydro, 3‴-hydroxy, 2′,4′-di-Me ether: [78876-32-1] ***7-(2,4-Dimethoxyphenyl)-3,4-dihydro-5-hydroxy-10-(3-hydroxy-3-methylbutyl)-2,2-dimethyl-2*H*,6*H*-benzo[1,2-*b*:5,4-*b*′]dipyran-6-one,* 9CI***
$C_{27}H_{32}O_7$ 468.546
Isol. from leaves of *Millettia pachycarpa*. Cryst. (petrol). Mp 150°.

Δ3″-Isomer, 2″-hydroxy: [165675-37-6] ***Erysenegalensein L***
$C_{25}H_{24}O_7$ 436.46
Constit. of *Erythrina senegalensis*. Yellow oil. $[\alpha]_D^{20}$ +19 (c, 1.3 in $CHCl_3$).

Crombie, L. *et al., JCS(C)*, 1968, 1899-1901 (*isol, struct*)
Singhal, A.K. *et al., Phytochemistry*, 1981, **20**, 803-806 (*Millettia pachycarpa constit*)
Raju, K.V. *et al., Tetrahedron*, 1981, **37**, 957-962 (*cmr*)
Taylor, R.B. *et al., J. Nat. Prod.*, 1986, **49**, 670-673 (*2,3-Dihydroauriculatin*)
Nkengfack, A.E. *et al., Planta Med.*, 1991, **57**, 488-491 (*4′-glucoside*)
Wandji, J. *et al., Phytochemistry*, 1994, **35**, 1573-1577 (*Erysenegalenseins F,L*)
Wandji, J. *et al., Planta Med.*, 1994, **60**, 178-180 (*Erysenegalensein I*)
Wandji, J. *et al., J. Nat. Prod.*, 1995, **58**, 105-108 (*Erysenegalensein C*)
Xiaoli, L. *et al., Chem. Pharm. Bull.*, 2006, **54**, 570-573 (*2,3-Dihydro-2′-O-methylauriculatin*)
Bae, E.Y. *et al., Planta Med.*, 2006, **72**, 945-948 (*2,3-Dihydroauriculatin*)

Australisin A† A-210

[1001325-01-4]

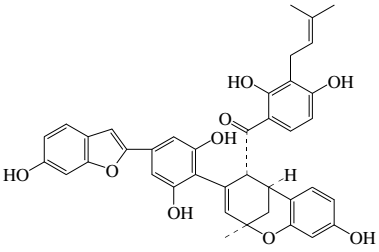


Absolute Configuration

$C_{35}H_{26}O_{10}$ 606.584
Constit. of the stem bark of *Morus australis*. Cytotoxic. Yellow powder. $[\alpha]_D^{26}$ +523 (c, 0.1 in MeOH). λ_{max} 230 (log ϵ 3.18); 253 (log ϵ 3.07); 268 (log ϵ 3.05); 327 (log ϵ 2.84); 364 (log ϵ 3) (MeOH).

Zhang, Q.-J. *et al., Chem. Biodiversity*, 2007, **4**, 1533-1540 (*Australisin A*)

Australisin B† A-211



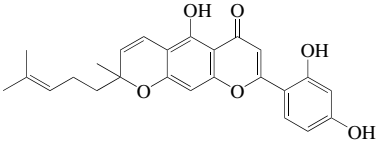
Absolute Configuration

$C_{39}H_{34}O_9$ 646.692
Constit. of the stem bark of *Morus australis*. Cytotoxic. Shows moderate cytotoxic activity against a range of human cancer cell lines. Yellow powder. $[\alpha]_D^{20}$ +191.3 (c, 0.12 in MeOH). λ_{max} 224 (log ϵ 4.83); 297 (sh) (log ϵ 4.63); 321 (log ϵ 4.8); 336 (sh) (log ϵ 4.72) (MeOH).

Zhang, Q.-J. *et al., Chem. Biodiversity*, 2007, **4**, 1533-1540 (*Australisin B, struct, abs config, cytotoxicity*)

Australone A A-212

[196705-71-2]



$C_{25}H_{24}O_6$ 420.461
Constit. of the root bark of *Morus australis*. Yellowish needles (hexane/Me_2CO). Mp 195-197°. $[\alpha]_D^{25}$-36 (c, 0.05 in Me_2CO). λ_{max} 230 (log ϵ 4.4); 290 (log ϵ 4.44); 310 (sh) (log ϵ 4.24); 358 (log ϵ 4.42) (MeOH).

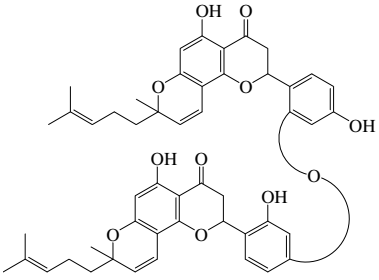
2,3-Dihydro: [123702-94-3] ***Kuwanol C***
$C_{25}H_{26}O_6$ 422.477
Constit. of the root bark of *Morus alba* (white mulberry). Amorph. powder. $[\alpha]_D^{22}$-10 (c, 0.31 in EtOH).

Hano, Y. *et al., Heterocycles*, 1989, **29**, 807-813 (*Kuwanol C*)

Ko, H.-H. *et al., J. Nat. Prod.*, 1997, **60**, 1008-1011 (*Australone A*)

Australone B A-213

[245420-94-4]

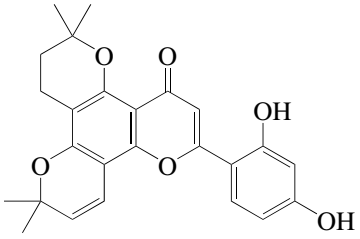


$C_{50}H_{50}O_{11}$ 826.938
Constit. of the cortex of *Morus australis*. Amorph. yellow powder. $[\alpha]_D^{25}$-42 (c, 0.1 in $CHCl_3$). λ_{max} 210 (log ϵ 4.06); 270 (log ϵ 4.15); 295 (sh) (log ϵ 3.71); 310 (sh) (log ϵ 3.44); 355 (log ϵ 2.92); 405 (sh) (log ϵ 2.49) (MeOH).

Ko, H.-H. *et al., Biochim. Biophys. Acta*, 1999, **1428**, 293-299

Austraone A A-214

[1437619-75-4]

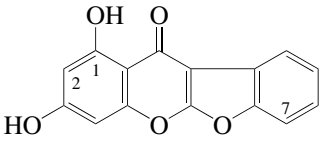


$C_{25}H_{24}O_6$ 420.461
Constit. of the roots of *Morus australis*. Amorph. yellow powder.

Zheng, Z.-P. *et al., Fitoterapia*, 2012, **83**, 1008-1013 (*Austraone A*)

Ayamenin B A-215

*1,3-Dihydroxy-11*H*-benzofuro[2,3-*b*][1]benzopyran-11-one,* CAS [132915-52-7]



$C_{15}H_8O_5$ 268.225
Stress metab. of *Iris pseudacorus* with $CuCl_2$. Needles. Mp 264.5-265.5°.

7-Hydroxy: [132915-53-8] ***Ayamenin C***. *Coccineone A*
$C_{15}H_8O_6$ 284.225
Constit. of the roots of *Boerhaavia coccinea* and a stress metab.of *Iris pseudacorus* with $CuCl_2$. Cryst. (CH_2Cl_2/MeOH). Mp > 310°. λ_{max} 222 (sh) (log ϵ 4.5); 254 (log ϵ 4.42); 320 (log ϵ 3.98) (MeOH).

2-Methoxy: [132915-51-6] ***Ayamenin A***
$C_{16}H_{10}O_6$ 298.251
Stress metab. of *Iris pseudacorus* with $CuCl_2$. Needles. Mp 233-234°.

2-Methoxy, di-Me ether: [1169449-65-3] *1,2,3-Trimethoxy-11*H*-benzofuro[2,3-*b*][1]benzopyran-11-one.* ***Aervin C***
$C_{18}H_{14}O_6$ 326.305
Constit. of *Aerva persica*. Cryst. Mp 248°. λ_{max} 262 (log ϵ 3.99); 288 (log ϵ 4.11); 333 (log ϵ 4.19) ($CHCl_3$).

2-Methoxy, 8-hydroxy: [132915-54-9] ***Ayamenin D***
$C_{16}H_{10}O_7$ 314.251
Stress metab. of *Iris pseudacorus* with $CuCl_2$.

8-Methoxy, 7-hydroxy: [135446-71-8] ***Ayamenin E***
$C_{16}H_{10}O_7$ 314.251
Stress metab. of *Iris pseudacorus* with $CuCl_2$. λ_{max} 221; 259; 334 (MeOH).

Hanawa, F. *et al., Heterocycles*, 1991, **32**, 1563-1570 (*Ayamenin B, cmr*)

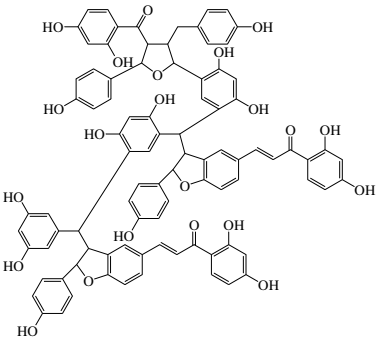
Ferrari, F. *et al., J. Nat. Prod.*, 1991, **54**, 597-598 (*Coccineone A*)

Hanawa, F. *et al., Phytochemistry*, 1991, **30**, 157-163 (*Ayamenins A-D*)

Hanawa, F. *et al., Phytochemistry*, 1991, **30**, 2197-2198 (*Ayamenin E*)

Imran, M. *et al., Magn. Reson. Chem.*, 2009, **47**, 532-536 (*Aervin C*)

Azobechalcone A216

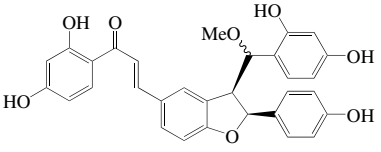


$C_{90}H_{70}O_{22}$ 1503.53
Incorrect MF given in the ref. Constit. of the stem bark of *Lophira alata*. Light brown solid.

Tih, A.E. *et al., Tet. Lett.*, 1999, **40**, 4721-4724 (*Azobechalcone, struct*)

Azobechalcone A A-217

[144078-18-2]

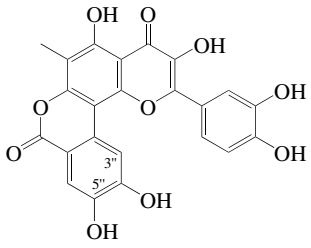


$C_{31}H_{26}O_8$ 526.542
Constit. of the bark of *Lophira alata*. Antitumour agent. Pale yellow solid. $[\alpha]_D^{21}$ +143 (c, 0.54 in MeOH). λ_{max} 379 (ϵ 7943) (MeOH).

Murakami, A. *et al., Phytochemistry*, 1992, **31**, 2689-2693 (*Azobechalcone A, struct*)

Baeckein A B-1

*2-(3,4-Dihydroxyphenyl)-3,5,10,11-tetrahydroxy-6-methyl-4*H,*8*H-*[2]*benzopyrano*[3,4-*h*]-1-benzopyran-4,8-dione*
[1357865-66-7]



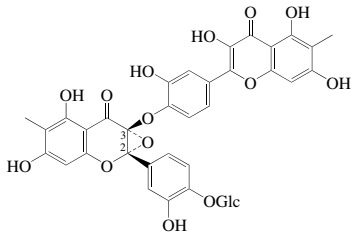
$C_{23}H_{14}O_{10}$ 450.358
Constit. of the roots of *Baeckea frutescens*. Amorph. yellow powder. λ_{max} 254 (log ϵ 3.52); 345 (log ϵ 3.1) (MeOH).

5″-Deoxy, 3″-hydroxy: [1357865-67-8] ***Baeckein B***
$C_{23}H_{14}O_{10}$ 450.358
Constit. of the roots of *Baeckea frutescens*. Amorph. yellow powder. λ_{max} 252 (log ϵ 3.5); 343 (log ϵ 3.11) (MeOH).

Jia, B.-X. *et al., Helv. Chim. Acta*, 2011, **94**, 2283-2288 (*Baeckeins A,B*)

Baeckein C B-2

[1346521-73-0]



Absolute Configuration

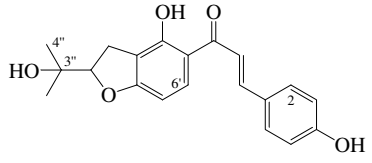
$C_{38}H_{32}O_{19}$ 792.659
Constit. of the roots of *Baeckea frutescens*. Amorph. yellow powder. $[\alpha]_D^{30}$-100 (c, 0.1 in MeOH). λ_{max} 272 (log ϵ 2.95); 313 (log ϵ 3.2); 375 (log ϵ 2.8) (MeOH).

2,3-Diepimer: [1346521-74-1] ***Baeckein D***
$C_{38}H_{32}O_{19}$ 792.659
Constit. of the roots of *Baeckea frutescens*. Amorph. yellow powder. $[\alpha]_D^{30}$-37.5 (c, 0.11 in MeOH). λ_{max} 272 (log ϵ 2.93); 312 (log ϵ 3.2); 374 (log ϵ 2.81) (MeOH).

Jia, B.-X. *et al., Magn. Reson. Chem.*, 2011, **49**, 757-761 (*Baeckeins C,D*)

Bakuchalcone B-3

1-[2,3-Dihydro-4-hydroxy-2-(1-hydroxy-1-methylethyl)-5-benzofuranyl]-2-propen-1-one, 9CI [84575-13-3]



$C_{20}H_{20}O_5$ 340.375
Constit. of the seeds of *Psoralea corylifolia* and the leaves of *Maclura tinctoria*. Pale yellow needles (Me_2CO/hexane). Mp 204-205°. λ_{max} 240 (log ϵ 3.8); 308 (log ϵ 3.7); 366 (log ϵ 4.3) (MeOH).

3″-Deoxy: [929258-80-0] ***3″-Deoxybakuchalcone***
$C_{20}H_{20}O_4$ 324.376
Constit. of the seeds of *Psoralea corylifolia*.

3″-Deoxy, 3″,4″-didehydro: [894353-17-4] ***Artonin ZA***. *Lespecyrtin* B_1
[1103683-91-5 (Lespecyrtin B_1)]
$C_{20}H_{18}O_4$ 322.36
Constit. of the leaves of *Artocarpus heterophyllus* and the rootsof *Lespedeza cyrtobotrya*. Melanin synthesis inhibitor. Amorph. solid. $[\alpha]_D^{23}$ +34.1 (c, 1.5 in MeOH). λ_{max} 370 (log ϵ 4.47) (MeOH).

3″-Deoxy, 3″,4″-didehydro, α,β-dihydro: [1103684-02-1] ***Lespecyrtin*** C_1
$C_{20}H_{20}O_4$ 324.376
Constit. of the roots of *Lespedeza cyrtobotrya*. Amorph. solid. $[\alpha]_D^{23}$ +59.4 (c, 1.08 in MeOH). λ_{max} 220 (sh) (log ϵ 4.44); 241 (sh) (log ϵ 4.05); 288 (log ϵ 4.27) (MeOH).

4-Deoxy: [61235-35-6] ***Flemistrictin B***
$C_{20}H_{20}O_4$ 324.376
Constit. of the leaves of *Flemingia stricta*. Orange-yellow needles (C_6H_6/hexane). Mp 135°. $[\alpha]_D^{26}$-95.9 (c, 0.44 in EtOH).

6′-Hydroxy: ***Desmethylxanthohumol J***
$C_{20}H_{20}O_6$ 356.374
Constit. of *Humulus lupulus*. Yellow-orange solid.

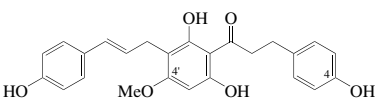
2-Hydroxy, 3″-deoxy, 3″,4″-didehydro: [894353-18-5] ***Artonin ZB***
$C_{20}H_{18}O_5$ 338.359
Constit. of the leaves of *Artocarpus heterophyllus*.

6′-Methoxy, 3″,4-dideoxy, 3″,4″-didehydro: ***Crassichalcone***
$C_{21}H_{20}O_4$ 336.387
Constit. of *Tephrosia crassifolia*. Yellow oil. λ_{max} 215 (log ϵ 4.26); 348 (log ϵ 4.25) (MeOH).

Rao, J.M. *et al., Indian J. Chem., Sect. B*, 1976, **14**, 339-342 (*Flemingia stricta constit, struct, synth*)
Gupta, G.K. *et al., Phytochemistry*, 1982, **21**, 2149-2151 (*Bakuchalcone, struct, synth*)
Gomez-Garibay, F. *et al., Phytochemistry*, 1999, **52**, 1159-1163 (*Crassichalcone*)
El-Sohly, H.N. *et al., Planta Med.*, 2001, **67**, 87-89 (*Maclura tinctoria constit*)
Chadwick, L.R. *et al., J. Nat. Prod.*, 2004, **67**, 2024-2032 (*Desmethylxanthohumol J*)
Yao, S. *et al., Zhongguo Tianran Yaowu*, 2005, **3**, 219-223 (*Artonins ZA,ZB*)
Agarwal, D. *et al., Indian J. Chem., Sect. B*, 2006, **45**, 2574-2579 (*3″-Deoxybakuchalcone*)
Mori-Hongo, M. *et al., J. Nat. Prod.*, 2009, **72**, 63-71 (*Lespecyrtins* B_1,C_1)

Balsacone A B-4

[1423582-77-7]



$C_{25}H_{24}O_6$ 420.461
Constit. of the buds of *Populus balsamifera*. Antibacterial agent. Active against *S. aureus*. Amorph. orange solid. λ_{max} 194; 208 (sh); 268; 288 (MeOH).

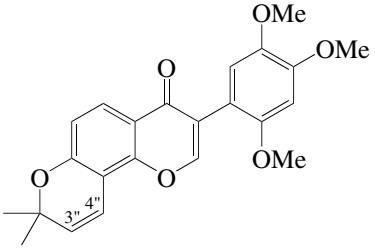
O-*De-Me, 4-Me ether:* [1423582-82-4] ***Balsacone B***
$C_{25}H_{24}O_6$ 420.461
Constit. of the buds of *Populus balsamifera*. Antibacterial agent. Active against *Stapylococcus aureus*. Amorph. orange solid. λ_{max} 194; 208 (sh); 268; 288 (MeOH).

4-Deoxy, O-*de-Me:* [1423582-87-9] ***Balsacone C***
$C_{24}H_{22}O_5$ 390.435
Constit. of the buds of *Populus balsamifera*. Antibacterial agent. Active against *Stapylococcus aureus*. Amorph. orange solid. λ_{max} 192; 206 (sh); 266; 290 (MeOH).

Lavoie, S. *et al., Tet. Lett.*, 2013, **54**, 1631-1633 (*Balsacones A,B,C*)

Barbigerone B-5

*8,8-Dimethyl-3-(2,4,5-trimethoxyphenyl)-4*H,*8*H-*benzo[1,2-*b:*3′,4′-*b*]dipyran-4-one,* 9CI. *Lonchocarpusone* [75425-27-3]



$C_{23}H_{22}O_6$ 394.423
Constit. of *Tephrosia barbigera*, *Lonchocarpus nicou*, *Lonchocarpus utilis*, *Lonchocarpus urucu*, *Millettia ferruginea*, *Millettia usaramensis* and *Sarcolobus globosus*. Inhibitor of NADH-ubiquinone dihydroreductase and ornithine decarboxylase. Light yellow cryst. (EtOH or petrol). Mp 153-154°. λ_{max} 236 (ϵ 22387); 263 (ϵ 29512); 294 (ϵ 12023) (MeOH).

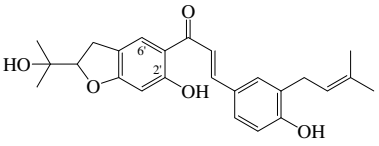
3″,4″-Dihydro, 3″,4″-dihydroxy: [219800-91-6] ***3″,4″-Dihydro-3″,4″-dihydroxylonchocarpusone***
$C_{23}H_{24}O_8$ 428.438
Constit. of *Lonchocarpus utilus* and *Lonchocarpus urucu*. Powder. Mp 228-230°. Possesses *cis*-config. λ_{max} 260 (log ϵ 1.74); 298 (log ϵ 2.25) (MeOH).

Vilian, C. *et al., Phytochemistry*, 1980, **19**, 988-989 (*Barbigerone, Tephrosia barbigera constit*)
Pathak, V.P. *et al., Indian J. Chem., Sect. B*, 1984, **23**, 89-90 (*synth*)
Kaouadji, M. *et al., J. Nat. Prod.*, 1986, **49**, 281-285 (*Lonchocarpus nicou constit*)
Dagne, E. *et al., Phytochemistry*, 1990, **29**, 2679-2682 (*Millettia ferruginea constit, struct*)
Yenesew, A. *et al., Phytochemistry*, 1998, **47**, 295-300 (*Millettia usaramensis constit*)

Fang, N. *et al., J. Nat. Prod.*, 1999, **62**, 205-210 (*3″,4″-Dihydro-3″,4″-dihydroxylonchocarpusone*)
Fang, N. *et al., J. Nat. Prod.*, 2000, **63**, 293 (*erratum, 3″,4″-Dihydro-3″,4″-dihydroxylonchocarpusone*)
Wangensteen, H. *et al., Planta Med.*, 2005, **71**, 754-758 (*Sarcolobus globosus constit*)
Wangensteen, H. *et al., Fitoterapia*, 2006, **77**, 290-295 (*Sarcolobus globosus constit*)
Chen, H. *et al., Youji Huaxue*, 2013, **33**, 164-168 (*synth*)

Bartericin B B-6

[681214-46-0]



$C_{25}H_{28}O_5$ 408.493

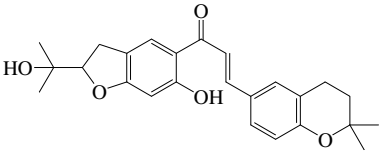
Chalcone (flavonoid) numbering shown. Constit. of the twigs of *Dorstenia barteri* var. *subtriangularis*. Yellow plates (EtOAc/petrol). Mp 184-185°. $[\alpha]_D^{25}$ + 125 (c, 0.01 in MeOH). λ_{max} 210 (log ϵ 4.42); 245 (log ϵ 4.1); 384 (log ϵ 4.47) (MeOH).

2′-Deoxy, 6′-hydroxy: [910805-48-0]
Hedysarumine B
$C_{25}H_{28}O_5$ 408.493
Constit. of the roots of *Hedysarum gmelinii*. Yellow plates (MeOH). Mp 146-148°. $[\alpha]_D^{25}$ +1.6 (Me_2CO).

Ngameni, B. *et al., Phytochemistry*, 2004, **65**, 427-432 (*Bartericin B*)
Liu, Y. *et al., J. Asian Nat. Prod. Res.*, 2005, **7**, 723-727 (*Hedysarumine B*)
Ngadjui, B.T. *et al., Phytochemistry*, 2005, **66**, 687-692 (*Bartericin B*)

Bartericin C B-7

[681214-25-5]

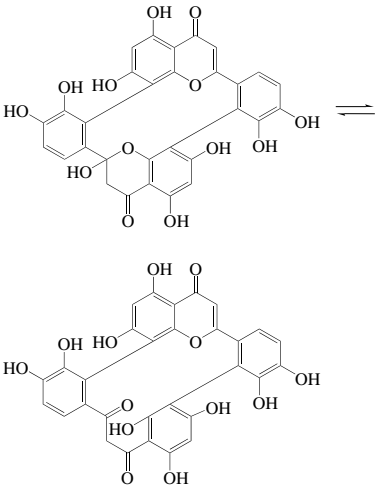


$C_{25}H_{28}O_5$ 408.493
Constit. of the twigs of *Dorstenia barteri* var. *subtriangularis*. Exhibits antibacterial props. Yellow oil. $[\alpha]_D^{25}$ + 301 (c, 0.03 in MeOH). λ_{max} 209 (log ϵ 4.36); 298 (log ϵ 3.8); 384 (log ϵ 4.3) (MeOH).

Ngameni, B. *et al., Phytochemistry*, 2004, **65**, 427-432 (*Bartericin C, struct*)
Kuete, V. *et al., Int. J. Antimicrob. Agents*, 2011, **37**, 156-161 (*activity*)

Bartramiaflavone B-8

[135117-91-8, 135117-93-0]



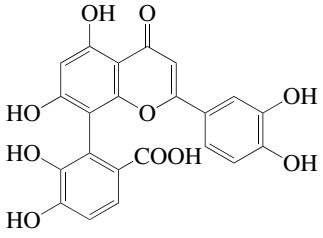
$C_{30}H_{18}O_{13}$ 586.464

Tautomeric. Isol. from moss *Bartramia pomiformis*. Antimicrobial agent. Amorph.

Seeger, T. *et al., Phytochemistry*, 1991, **30**, 1653-1656 (*Bartramiaflavone*)
Basile, A. *et al., Phytochemistry*, 1999, **52**, 1479-1482 (*activity*)

Bartramic acid B-9

8-(2-Carboxy-5,6-dihydroxyphenyl)-3′,4′,5,7-tetrahydroxyflavone. Luteolin-8,2″-protocatechuic acid [144078-05-7]

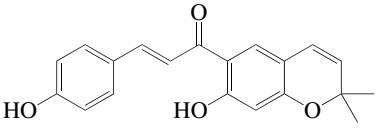


$C_{22}H_{14}O_{10}$ 438.347
Constit. of moss *Bartramia pomiformis*.

Seeger, T. *et al., Z. Naturforsch., C*, 1992, **47**, 527-530 (*Bartramic acid, struct*)

Bavachromene B-10

*1-(7-Hydroxy-2,2-dimethyl-2*H*-1-benzopyran-6-yl)-3-(4-hydroxyphenyl)-2-propen-1-one, 9CI. Psorachromene* [41743-38-8]



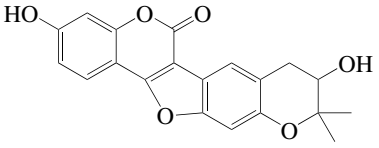
$C_{20}H_{18}O_4$ 322.36

Constit. of seeds of *Psoralea corylifolia*. Red needles (C_6H_6). Mp 196-197°. λ_{max} 224 (log ϵ 4.38); 270 (log ϵ 4.32); 365 (log ϵ 4.38) (MeOH).

Bajwa, B.S. *et al., Curr. Sci.*, 1972, **41**, 814-815 (*Psoralea coryfolia constit*)
Bajwa, B.S. *et al., Indian J. Chem.*, 1974, **12**, 15-19 (*struct, synth*)
Yu, L.L. *et al., Pol. J. Chem. (Rocz. Chem.)*, 2005, **79**, 1173-1177 (*Psoralea coryfolia constit, struct*)
Tewari, A. *et al., Indian J. Chem., Sect. B*, 2010, **49**, 256-259 (*Psorachromene*)

Bavacoumestan A B-11

[129385-63-3]



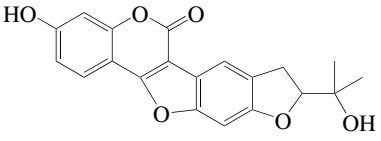
$C_{20}H_{16}O_6$ 352.343
Constit. of the seeds of *Psoralea corylifolia*.

Di-Ac: [129385-78-0]
Cryst. ($CHCl_3$/EtOH). Mp 242-243°.

Gupta, S. *et al., Phytochemistry*, 1990, **29**, 2371-2373 (*Bavacoumestan A, struct*)

Bavacoumestan B B-12

[129385-64-4]



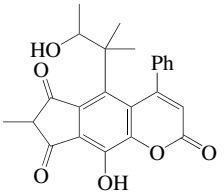
$C_{20}H_{16}O_6$ 352.343
Constit. of *Psoralea corylifolia*.

3-Ac: [129385-77-9]
$C_{22}H_{18}O_7$ 394.38
Needles ($CHCl_3$/EtOH). Mp 236-238° dec. λ_{max} 230 (log ϵ 5.19); 250 (sh); 288 (sh); 300 (log ϵ 5.5); 340 (log ϵ 4.55); 350 (log ϵ 4.71); 357 (log ϵ 4.69) (MeOH).

Gupta, S. *et al., Phytochemistry*, 1990, **29**, 2371-2873 (*Bavacoumestan B, 3-Ac*)

Beccamarin B-13

[1334180-99-2]



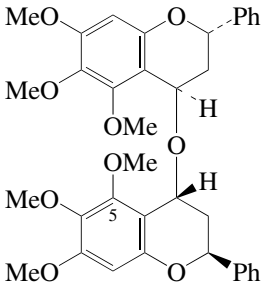
$C_{24}H_{22}O_6$ 406.434

Constit. of the stem bark of *Mesua beccariana*. Yellow solid. Mp 139-139.6°. λ_{max} 209 (log ϵ 5.23); 229 (log ϵ 5.27); 281 (log ϵ 5.36); 348 (log ϵ 5.45) (EtOH).

Ee, G.C.L. *et al., Molecules*, 2011, **16**, 7249-7255 (*Beccamarin*)

Beilschmieflavonoid A **B-14**

[1197826-48-4]



Absolute Configuration

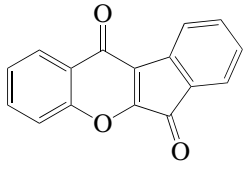
$C_{36}H_{38}O_9$ 614.691
Constit. of the stem bark of *Beilschmiedia zenkeri*. Needles. Mp 236-237°. $[\alpha]_D^{20}$ + 30.4 (c, 0.3 in $CHCl_3$). λ_{max} 227 (log ϵ 5.28); 280 (log ϵ 3.52) (MeOH).

O^5-*De-Me:* [1197826-49-5] ***Beilschmieflavonoid B***
$C_{35}H_{36}O_9$ 600.664
Constit. of the stem bark of *Beilschmiedia zenkeri*. Exhibited weak activity against *Streptococcus minor*. Powder. $[\alpha]_D^{20}$ +18.2 (c, 0.2 in $CHCl_3$). λ_{max} 227 (log ϵ 5.18); 280 (log ϵ 3.69) (MeOH).

Lenta, B.N. *et al., J. Nat. Prod.*, 2009, **72**, 2130-2134 (*Beilschmieflavonoids A,B, cryst struct, activity*)

Benz[*b*]indeno[1,2-*e*]pyran-6,11-dione **B-15**

Wrightiadione [148180-61-4]

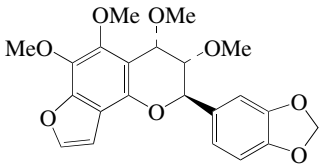


$C_{16}H_8O_3$ 248.237
Constit. of the bark of *Wrightia tomentosa*. Exhibits cytotoxic activity against the murine P388 lymphocytic leukemia cell line. Orange cryst. (EtOH). Mp 244-246° (228-230°). λ_{max} 259 (ϵ 48000); 272 (ϵ 955); 282 (ϵ 790); 306 (ϵ 1050); 336 (ϵ 900); 354 (ϵ 480); 398 (ϵ 480) (MeOH) (Berdy).

Lin, L.-J. *et al., Phytochemistry*, 1992, **31**, 4333-4335 (*Wrightiadione, cryst struct*)
Ruchirawat, S. *et al., Synth. Commun.*, 2001, **31**, 1765-1769 (*synth*)
Thasana, N. *et al., Synlett*, 2003, 1037-1039 (*synth*)

2-(1,3-Benzodioxol-5-yl)-3,4-dihydro-3,4,5,6-tetramethoxy-2*H*-furo[2,3-*h*]-1-benzopyran, 9CI **B-16**

3,4,5,6-Tetramethoxy-3′,4′-methylenedioxyfurano[2″,3″:7,8]flavan



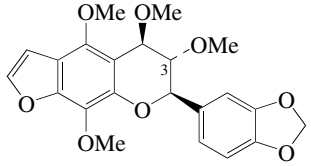
$C_{22}H_{22}O_8$ 414.411

(2*R,3*S**,4*S**)-*form*** [179003-93-1]
Constit. of *Lonchocarpus subglaucescens*. λ_{max} 242 (log ϵ 4.27); 262 (log ϵ 4.23) ($CHCl_3$).

Magalhaes, A.F. *et al., Phytochemistry*, 1996, **42**, 1459-1471 (*Lonchocarpus subglaucescens constit*)

7-(1,3-Benzodioxol-5-yl)-6,7-dihydro-4,5,6,9-tetramethoxy-5*H*-furo[3,2-*g*]-1-benzopyran, 9CI **B-17**

3,4,5,8-Tetramethoxy-3′,4′-methylenedioxyfurano[2″,3″:7,6]flavan



$C_{22}H_{22}O_8$ 414.411

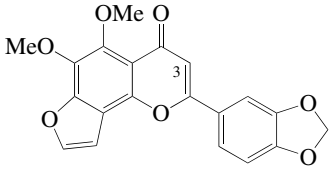
(2*R,3*S**,4*R**)-*form*** [179003-92-0]
Constit. of *Lonchocarpus subglaucescens*. Mp 106.5°. λ_{max} 256 (log ϵ 4.34) ($CHCl_3$).

3-Demethoxy: [179003-90-8] *4,5,8-Trimethoxy-3′,4′-methylenedioxyfurano[2″,3″:7,6]flavan*
$C_{21}H_{20}O_7$ 384.385
Constit. of *Lonchocarpus subglaucescens*. Oil. λ_{max} 240 (log ϵ 4.15); 267 (log ϵ 4.11) ($CHCl_3$).

Magalhaes, A.F. *et al., Phytochemistry*, 1996, **42**, 1459-1471 (*Lonchocarpus subglaucescens constit*)

2-(1,3-Benzodioxol-5-yl)-5,6-dimethoxy-4*H*-furo[2,3-*h*]-1-benzopyran-4-one, 9CI **B-18**

5,6-Dimethoxy-3′,4′-methylenedioxyfurano[7,8:2″,3″]flavone [77970-09-3]



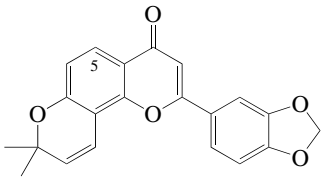
$C_{20}H_{14}O_7$ 366.326
Constit. of the roots of *Lonchocarpus campestris* and *Lonchocarpus araripensis*. Cryst. (EtOH). Mp 233° (222.2-226.8°).

3-Methoxy: [77970-08-2] *3,5,6-Trimethoxy-3′,4′-methylenedioxyfurano[2″,3″:7,8]flavone.* ***5,6-Dimethoxypongapin***
$C_{21}H_{16}O_8$ 396.353
Constit. of the roots of *Lonchocarpus araripensis*. Cryst. (EtOH). Mp 212°.

Do Nascimento, M.C. *et al., Phytochemistry*, 1981, **20**, 147-152 (*Lonchocarpus araripensis constits, Derris araripensis constits*)
Pires, A.M.L. *et al., Quim. Nova*, 2011, **34**, 268-271 (*Lonchocarpus campestris constit*)

2-(1,3-Benzodioxol-5-yl)-8,8-dimethyl-4*H*,8*H*-benzo[1,2-*b*:3,4-*b*']dipyran-4-one, 9CI **B-19**

7,8-(2,2-Dimethylpyrano)-3′,4′-methylenedioxyflavone [64316-98-9]

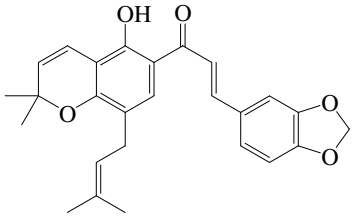


$C_{21}H_{16}O_5$ 348.354
Isol. from the roots of *Dahlstedtia pentaphylla*, *Dahlstedtia pinnata* and *Lonchocarpus subglaucescens*. Yellow cryst. Mp 232-234°.

5-Methoxy: [64125-34-4] *7,8-(2,2-Dimethylpyrano)-5-methoxy-3′,4′-methylenedioxyflavone*
$C_{22}H_{18}O_6$ 378.381
Isol. from *Dahlstedtia pinnata*, *Pongamia pinnata* and *Pongamia glabra*. Pale yellow cryst. Mp 242-244°.

Subrahmanyam, K. *et al., Indian J. Chem., Sect. B*, 1977, **15**, 105-108 (*synth*)
Islam, A. *et al., Indian J. Chem., Sect. B*, 1981, **20**, 21-22 (*synth*)
Garcez, F.R. *et al., Phytochemistry*, 1988, **27**, 1079-1083 (*Dahlstedtia pinnata constits*)
Tanaka, T. *et al., Phytochemistry*, 1992, **31**, 993-998 (*Pongamia pinnata constit*)
Magalhaes, A.F. *et al., Phytochemistry*, 1996, **42**, 1459-1471 (*Lonchocarpus subglaucescens constit*)
Tan, W. *et al., Synth. Commun.*, 1999, **29**, 3369-3377 (*synth*)
Lee, Y.R. *et al., Synthesis*, 2006, 603-608 (*synth*)
Xia, L. *et al., Helv. Chim. Acta*, 2013, **96**, 644-650 (*synth, pmr, cmr*)

3-(1,3-Benzodioxol-5-yl)-1-[5-hydroxy-2,2-dimethyl-8-(3-methyl-2-butenyl)-2*H*-1-benzopyran-6-yl]-2-propen-1-one **B-20**

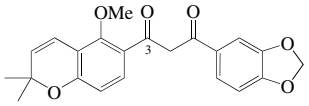


$C_{26}H_{26}O_5$ 418.488

(*E*)-*form* [865445-59-6]
Constit. of the stem bark of *Pongamia pinnata*. Yellow oil. λ_{max} 285; 356; 375 (MeOH).

Yin, H. *et al., Z. Naturforsch., B*, 2005, **60**, 356-358 (*Pongamia pinnata constit, struct*)

1-(1,3-Benzodioxol-5-yl)-3-(5-methoxy-2,2-dimethyl-2*H*-1-benzopyran-6-yl)-1,3-propanedione, 9CI **B-21**



$C_{22}H_{20}O_6$ 380.396
Enolised β-diketone.

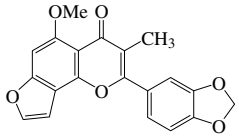
Diketo-*form* [179003-82-8]
Constit. of the roots of *Lonchocarpus subglaucescens*. Oil. λ_{max} 241 (log ϵ 4.18); 371 (log ϵ 4.35) ($CHCl_3$).

Enol-*form*

*3-Me ether: 1-(1,3-Benzodioxol-5-yl)-3-methoxy-3-(5-methoxy-2,2-dimethyl-2*H*-1-benzopyran-6-yl)-2-propen-1-one* [179003-83-9 (*Z*)-isomer, 179003-84-0 (*E*)-isomer]
$C_{23}H_{22}O_6$ 394.423
Constit. of *Lonchocarpus subglaucescens*. λ_{max} 242 (log ϵ 4.49); 289 (log ϵ 4.3); 319 (log ϵ 4.31) ($CHCl_3$).

Magalhaes, A.F. *et al., Phytochemistry*, 1996, **42**, 1459-1471 (*Lonchocarpus subglaucescens constits*)

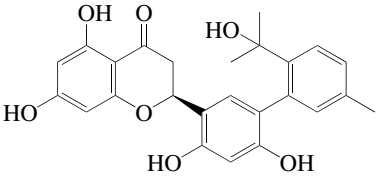
2-(1,3-Benzodioxol-5-yl)-5-methoxy-3-methyl-4*H*-furo[2,3-*h*]-1-benzopyran-4-one, 9CI **B-22**
*5-Methoxy-3-methyl-3′,4′-methylenedioxyfurano[2,3-*h*]flavone* [616205-36-8]



$C_{20}H_{14}O_6$ 350.327
Constit. of the leaves of *Hibiscus rosa-sinensis*.

Hossain, M.A. *et al., Pak. J. Sci. Ind. Res.*, 2003, **46**, 164-166 (*Hibiscus rosa-sinensis constit*)

Benzokuwanon E **B-23**
*2-[4,6-Dihydroxy-2′-(1-hydroxy-1-methylethyl)-5′-methyl-[1,1′-biphenyl]]-2,3-dihydro-5,7-dihydroxy-4*H*-1-benzopyran-4-one,* CAS

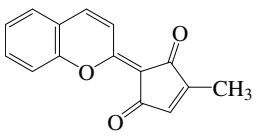


$C_{25}H_{24}O_7$ 436.46

(*S*)-*form* [1422284-82-9]
Constit. of *Morus australis*. Yellow powder (Me_2CO). $[\alpha]_D^{20}$-21.1 (c, 0.07 in MeOH). λ_{max} 197 (log ϵ 4.03); 214 (log ϵ 4.23); 283 (log ϵ 3.95); 321 (log ϵ 3.68) (MeOH).

Zheng, Z.-F. *et al., J. Asian Nat. Prod. Res.*, 2012, **14**, 263-269 (*Benzokuwanon E, cd, struct*)

2-(2*H*-1-Benzopyran-2-ylidene)-4-methyl-4-cyclopentene-1,3-dione **B-24**



(*E*)-*form*

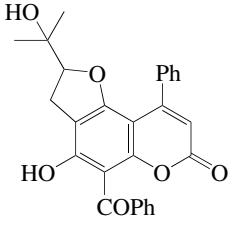
$C_{15}H_{10}O_3$ 238.242

(*E*)-*form* [749866-06-6]
Constit. of the roots of *Piper carniconnectivum*.

(*Z*)-*form* [749866-05-5]
Constit. of the roots of *Piper carniconnectivum*.

Facundo, V.A. *et al., J. Braz. Chem. Soc.*, 2004, **15**, 140-145 (*Piper carniconnectivum constits*)

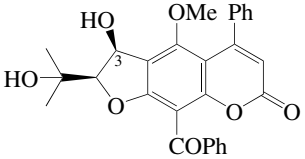
5-Benzoyl-2,3-dihydro-4-hydroxy-2-(1-hydroxyisopropyl)-9-phenyl-7*H*-furo[2,3-*f*][1]benzopyran-7-one *Hydrohydroxyisocalanone* [199273-29-5] **B-25**



$C_{27}H_{22}O_6$ 442.467
Constit. of *Calophyllum teysmannii* var. *inophylloide*. Yellow oil. Racemic. λ_{max} 236; 256; 318 (no solvent reported).

Cao, S.-G. *et al., Heterocycles*, 1997, **45**, 2045-2052 (*Hydrohydroxyisocalanone, struct*)

9-Benzoyl-2,3-dihydro-3-hydroxy-2-(1-hydroxy-1-methylethyl)-4-methoxy-5-phenyl-7*H*-furo[3,2-*g*]-1-benzopyran-7-one **B-26**
[213834-23-2]



Absolute Configuration

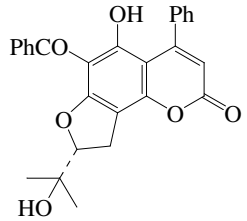
$C_{28}H_{24}O_7$ 472.493

Constit. of *Calophyllum teysmannii* var. *inophylloide*. Pale yellow needles (EtOH). Mp 206-208°. $[\alpha]_D^{25}$-8.4 (c, 0.5 in $CHCl_3$). λ_{max} 254; 294; 328 (EtOH).

3-Deoxy: [213834-15-2] *9-Benzoyl-2,3-dihydro-2-(1-hydroxy-1-methylethyl)-4-methoxy-5-phenyl-7*H*-furo[3,2-*g*]-1-benzopyran-7-one*
$C_{28}H_{24}O_6$ 456.494
Constit. of *Calophyllum teysmannii* var. *inophylloide*. Pale yellow needles (EtOH). Mp 208-210°. $[\alpha]_D^{25}$-18.1 (c, 0.8 in $CHCl_3$). λ_{max} 224; 252; 292; 336 (EtOH).

Cao, S.G. *et al., Helv. Chim. Acta*, 1998, **81**, 1404-1416 (*Calophyllum teysmannii constits, struct*)

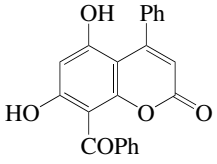
6-Benzoyl-8,9-dihydro-5-hydroxy-8-(1-hydroxy-1-methylethyl)-4-phenyl-2*H*-furo[2,3-*h*]-1-benzopyran-2-one **B-27**
[213834-10-7]



$C_{27}H_{22}O_6$ 442.467
Constit. of *Calophyllum teysmannii* var. *inophylloide*. Pale yellow powder. $[\alpha]_D^{25}$-80.5 (c, 0.2 in $CHCl_3$). Abs config. tentatively assigned. λ_{max} 238 (sh); 296; 348 (EtOH).

Cao, S.-G. *et al., Helv. Chim. Acta*, 1998, **81**, 1404-1416 (*Calophyllum teysmannii constit, struct, abs config*)

8-Benzoyl-5,7-dihydroxy-4-phenyl-2*H*-1-benzopyran-2-one **B-28**
8-Benzoyl-5,7-dihydroxy-4-phenylcoumarin [213834-75-4]



$C_{22}H_{14}O_5$ 358.35
Mp 254-256° (synthetic).

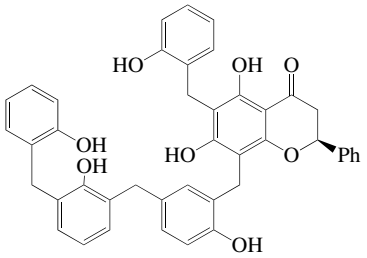
5-Me ether: [199181-02-7] *8-Benzoyl-7-hydroxy-5-methoxy-4-phenyl-2*H*-1-benzopyran-2-one,* 9CI. *8-Benzoyl-7-hydroxy-5-methoxy-4-phenylcoumarin*
$C_{23}H_{16}O_5$ 372.376
Constit. of *Calophyllum teysmannii* var. *inophylloide*. Yellow needles ($CHCl_3$). Mp 220-222°. λ_{max} 252; 290 (sh); 328 (no solvent reported).

Cao, S.-G. *et al., Heterocycles*, 1997, **45**, 2045-2052 (*5-Me ether, struct*)

Cao, S.-G. *et al., Helv. Chim. Acta*, 1998, **81**, 1404-1416 (*5-Me ether, synth*)

5′′′′-Benzyl-2′′′′′-hydroxyisouvarinol A B-29

3′′′′-(2-Hydroxybenzyl)isouvarinol [158563-24-7]



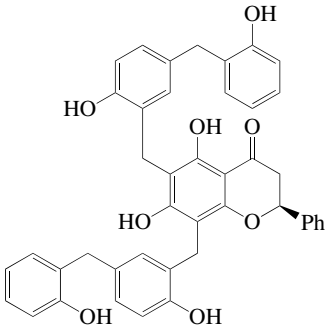
$C_{43}H_{36}O_8$ 680.753

Constit. of the roots of *Xylopia africana* (Annonaceae). Antibacterial agent. Light yellow cryst. Mp 220°.

Anam, E.M. *et al., Indian J. Chem., Sect. B*, 1994, **33**, 1009-1011 (*Xylopica africana constit, struct*)

5′′-Benzyl-2′′′-hydroxyisouvarinol B B-30

5′′-(2-Hydroxybenzyl)isouvarinol [158563-25-8]



$C_{43}H_{36}O_8$ 680.753

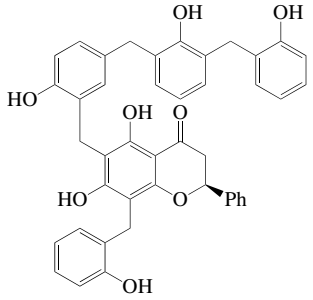
Constit. of the roots of *Xylopia africana* (Annonaceae). Antibacterial agent. Light yellow cryst. Mp 183°.

Anam, E.M. *et al., Indian J. Chem., Sect. B*, 1994, **33**, 1009-1011 (*Xylopia africana constit, struct*)

Urgaonkar, S. *et al., Org. Lett.*, 2005, **7**, 5609-5612 (*synth*)

3′′′′-Benzyl-2′′′′′-hydroxyuvarinol B-31

3′′′′-(2-Hydroxybenzyl)uvarinol [158563-23-6]



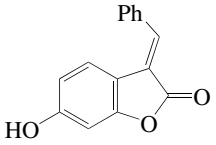
$C_{43}H_{36}O_8$ 680.753

Constit. of the roots of *Xylopia africana* (Annonaceae). Antibacterial agent. Light yellow cryst. Mp 186°. λ_{max} 289 (ϵ 6500); 324 (ϵ 10500) (MeOH).

Anam, E.M. *et al., Indian J. Chem., Sect. B*, 1994, **33**, 1009-1011 (*Xylopia africana constit, struct*)

3-Benzylidene-6-hydroxy-2(3*H*)-benzofuranone B-32

*6-Hydroxy-3-(phenylmethylene)-2(3*H*)-benzofuranone*



$C_{15}H_{10}O_3$ 238.242

(E)-form [412299-91-3]

Constit. of *Homalium brachybotrys*. Cryst. (EtOH aq.) or red gum. Mp 172°. λ_{max} 220 (log ϵ 4.2); 258 (log ϵ 3.94); 378 (log ϵ 4.09) (MeOH).

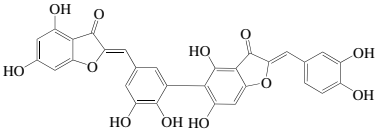
Molho, D. *et al., Bull. Soc. Chim. Fr.*, 1954, 1397-1401 (*synth, uv*)

Coillard, J. *et al., C. R. Hebd. Seances Acad. Sci.*, 1954, **238**, 1890-1892 (*synth*)

Mosaddik, A. *et al., Nat. Prod. Res.*, 2007, **21**, 1191-1198 (*Homalium brachybotrys constit, struct*)

Biaureusidin B-33

3′,4,4′,4″,4‴,5‴,6,6″-Octahydroxy-5,3‴-biaurone [155334-81-9]



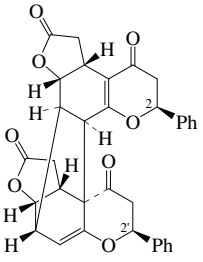
$C_{30}H_{18}O_{12}$ 570.465

Constit. of *Aulacomnium palustre*.

Geiger, H. *et al., Z. Naturforsch., C*, 1993, **48**, 821-826 (*Biaureusidin*)

Bicaryanone A B-34

[371195-23-2]



Absolute Configuration

$C_{34}H_{28}O_8$ 564.59

Constit. of *Cryptocarya infectoria*. Amorph. powder. $[\alpha]_D^{25}$ +269.4 (c, 0.83 in $CHCl_3$). λ_{max} 202 (ϵ 35790); 272 (ϵ 10740) (EtOH).

2-Epimer: [371195-33-4] ***Bicaryanone B***

$C_{34}H_{28}O_8$ 564.59

Constit. of *Cryptocarya infectoria*. Amorph. powder. $[\alpha]_D^{25}$ +154.3 (c, 0.7 in $CHCl_3$). λ_{max} 201 (ϵ 40130); 270 (ϵ 11910) (EtOH).

2′-Epimer: [371195-49-2] ***Bicaryanone C***

$C_{34}H_{28}O_8$ 564.59

Constit. of *Cryptocarya infectoria*. Amorph. powder. $[\alpha]_D^{25}$ +287.8 (c, 0.93 in $CHCl_3$). λ_{max} 201 (ϵ 32990); 274 (ϵ 9140) (EtOH).

2,2′-Diepimer: [371195-53-8] ***Bicaryanone D***

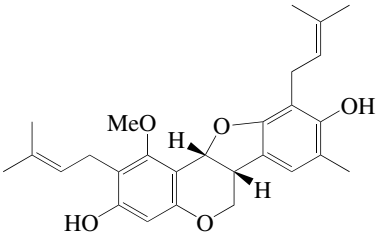
$C_{34}H_{28}O_8$ 564.59

Unstable cryst. (EtOAc). Constit. of *Cryptocarya infectoria*. $[\alpha]_D^{25}$ +162.2 (c, 0.93 in $CHCl_3$). λ_{max} 208 (ϵ 23600); 269 (ϵ 10780) (MeCN).

Dumontet, V. *et al., Tetrahedron*, 2001, **57**, 6189-6196 (*Bicaryanones A-D*)

Bicolosin A B-35

3,9-Dihydroxy-2,10-diprenyl-1-methoxy-8-methylpterocarpan [1337979-76-6]



Absolute Configuration

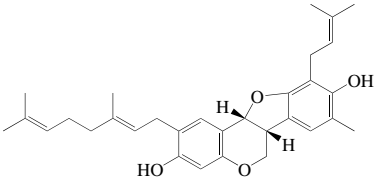
$C_{27}H_{32}O_5$ 436.547

Constit. of the roots of *Lespedeza bicolor*. Neuraminidase inhibitor. Powder. $[\alpha]_D^{20}$-71 (c, 0.23 in MeOH).

Woo, H.S. *et al., Bioorg. Med. Chem. Lett.*, 2011, **21**, 6100-6103 (*Bicolosin A*)

Bicolosin B B-36

*2-Geranyl-3,9-dihydroxy-8-methyl-10-prenylpterocarpan. 2-(3,7-Dimethyl-2,6-octadien-1-yl)-6*a,*11*a*-dihydro-8-methyl-10-(3-methyl-2-buten-1-yl)-6*H*-benzofuro[3,2-*c*][1]benzopyran-3,9-diol,* CAS [1337979-77-7]



Absolute Configuration

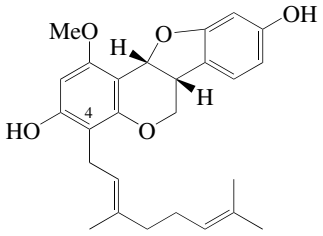
$C_{31}H_{38}O_4$ 474.639

Constit. of the roots of *Lespedeza bicolor*. Neuraminidase inhibitor. Yellow powder. $[\alpha]_D^{20}$-149 (c, 0.21 in MeOH).

Woo, H.S. *et al., Bioorg. Med. Chem. Lett.*, 2011, **21**, 6100-6103 (*Bicolosin B, activity*)

Bicolosin C **B-37**

4-Geranyl-3,9-dihydroxy-1-methoxypterocarpan [1337979-78-8]



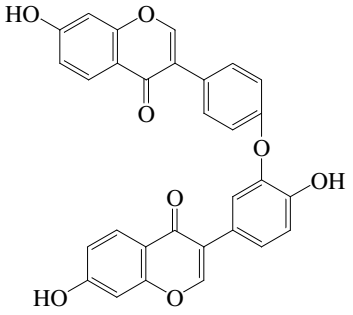
Absolute Configuration

$C_{26}H_{30}O_5$ 422.52
Constit. of the roots of *Lespedeza bicolor*. Neuraminidase inhibitor. Amorph. yellow powder. $[\alpha]_D^{20}$-122 (c, 0.21 in MeOH).

Woo, H.S. *et al., Bioorg. Med. Chem. Lett.*, 2011, **21**, 6100-6103 (*Bicolosin C, activity*)

Bi-(4′-*O*-3′)-daidzein **B-38**

*7-Hydroxy-3-[4-[2-hydroxy-5-(7-hydroxy-4-oxo-4*H*-1-benzopyran-3-yl)phenoxy]phenyl]-4*H*-1-benzopyran-4-one, CAS. Antibiotic A 758493. A 758493* [188968-56-1]

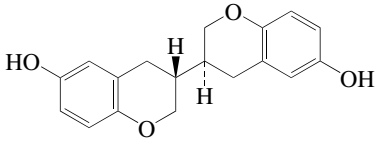


$C_{30}H_{18}O_8$ 506.467
Prod. by *Microbispora* sp. SANK60695. Testosterone 5α-reductase inhibitor. Used for control of prostatic hyperplasia.

Japan. Pat., 1997, 97 67 362 (*Antibiotic A 758493*)

3,3′-Bi(3,4-dihydro-2*H*-1-benzopyran-6-ol) **B-39**

*3,3′-Bi[3,4-dihydro-6-hydroxy-2*H*-1-benzopyran]*



$C_{18}H_{18}O_4$ 298.338

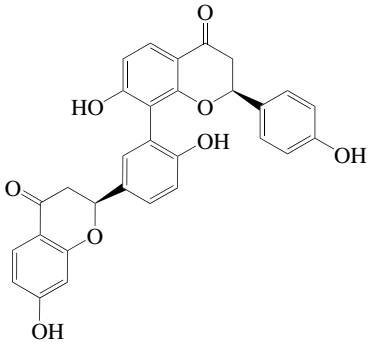
(3*R,3′*S**)-*form***

Di-Me ether: [495396-80-0] *3,3′,4,4′-Tetrahydro-6,6′-dimethoxy-3,3′-bi-2*H*-1-benzopyran*
$C_{20}H_{22}O_4$ 326.391
Constit. of *Balanophora fungosa* and *Siegesbeckia pubescens.*

Xiong, J. *et al., Tianran Chanwu Yanjiu Yu Kaifa*, 2002, **14**, 7-8 (*Siegesbeckia pubescens constit*)
Panthama, N. *et al., Chem. Pharm. Bull.*, 2009, **57**, 1352-1355 (*Balanophora fungosa constit*)

8,3‴-Bi[4′,7-dihydroxyflavanone] **B-40**

*8-[5-(3,4-Dihydro-7-hydroxy-4-oxo-2*H*-1-benzopyran-2-yl)-2-hydroxyphenyl]-2,3-dihydro-7-hydroxy-2-(4-hydroxyphenyl)-4*H*-1-benzopyran-4-one, 9CI* [97640-93-2]

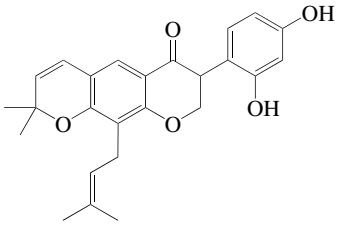


$C_{30}H_{22}O_8$ 510.499
Isol. from *Semecarpus anacardium*.

Murthy, S.S.N. *et al., Phytochemistry*, 1985, **24**, 1065-1069 (*Semecarpus anacardium constit*)

Bidwillon B **B-41**

2′,4′-Dihydroxy-6″,6″-dimethyl-8-prenylpyrano(2″,3″:7,6)isoflavanone



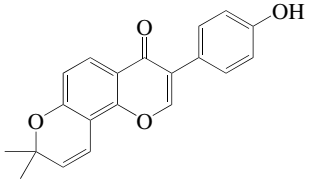
$C_{25}H_{26}O_5$ 406.477

(±)-*form* [147742-11-8]
Constit. of *Erythrina* x *bidwilli*, *Erythrina orientalis* and *Erythrina variegata*. Amorph. powder.

Iinuma, M. *et al., Chem. Pharm. Bull.*, 1992, **40**, 2749-2752 (*Bidwillon B, struct*)

Bidwillon C **B-42**

*3-(4-Hydroxyphenyl)-8,8-dimethyl-4*H*,8*H*-benzo[1,2-b:3,4-b′]dipyran-4-one, 9CI. Isoerythrinin A* [161099-44-1]



$C_{20}H_{16}O_4$ 320.344
Constit. of the root bark of *Erythrina* x. *bidwilli*, *Erythrina variegata*, and in leaves of *Bituminaria morisiana*. Amorph. powder. λ_{max} 212 (log ϵ 4.24); 257 (log ϵ 4.47); 323 (log ϵ 3.7) (MeOH). λ_{max} 212 (ϵ 17378); 257 (ϵ 29500); 323 (ϵ 5010) (MeOH) (Berdy).

Me ether: [31273-64-0] ***Calopogoniumisoflavone A***. *Calpogoniumisoflavone A*
$C_{21}H_{18}O_4$ 334.371
Isol. from seeds of *Calopogonium mucunoides* and *Millettia ferruginea*. Cryst. (C_6H_6/petrol).

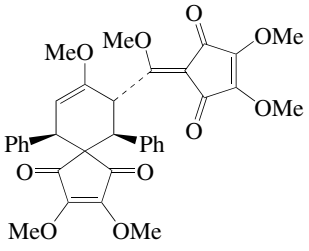
4′-O-(3-Methyl-2-butenyl): [173615-31-1] ***4′-O-Prenylisoerythrinin A***
$C_{25}H_{24}O_4$ 388.462
Constit. of *Millettia dura*. Amorph.

6-Methoxy, Me ether: [191484-88-5] ***6-Methoxycalopogoniumisoflavone A***. *6-Methoxycalpogoniumisoflavone A*
$C_{22}H_{20}O_5$ 364.397
Constit. of the seeds of *Millettia dura*. Amorph. solid (EtOAc). λ_{max} 263 (4.38); 302 (3.98); 317 (3.99) (MeOH).

Vilain, C. *et al., Bull. Soc. R. Sci. Liege*, 1975, **44**, 306-309 (*Calopogoniumisoflavone A*)
Jain, A.C. *et al., Indian J. Chem., Sect. B*, 1985, **24**, 609-613 (*synth, Calopogoniumisoflavone A*)
Murthy, M.S.R. *et al., Magn. Reson. Chem.*, 1986, **24**, 225-230 (*cmr*)
Dagne, E. *et al., Phytochemistry*, 1990, **29**, 2679-2682 (*Millettia ferruginea constit*)
Iinuma, M. *et al., Heterocycles*, 1994, **39**, 687-692 (*Bidwillon C*)
Yenesew, A. *et al., Phytochemistry*, 1996, **41**, 951-955 (*4′-O*-Prenylisoerythrinin A)
Yenesew, A. *et al., J. Nat. Prod.*, 1997, **60**, 806-807 (*6-Methoxycalopogoniumisoflavone A*)
Tanaka, H. *et al., Heterocycles*, 2003, **60**, 2767-2773 (*Erythrina variegata constit*)
Cottiglia, F. *et al., Planta Med.*, 2005, **71**, 254-260 (*Bituminaria morisiana constit*)

Bilinderone **B-43**

[1227375-09-8]



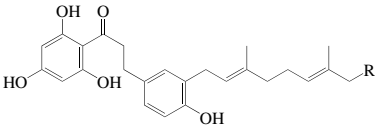
Relative Configuration

$C_{34}H_{32}O_{10}$ 600.621
Dimer of the modified chalcone Methyllinderone, M-86. Constit. of the roots of *Lindera aggregata*. Cryst. ($CHCl_3$/MeOH). Mp 201-202°. Racemic. λ_{max} 251 (log ϵ 4.4); 298 (log ϵ 4.36) ($CHCl_3$).

Wang, F. *et al., Org. Lett.*, 2010, **12**, 2354-2357 (*Bilinderone*)
Tan, H. *et al., Org. Lett.*, 2011, **13**, 2192-2195 (*synth, biosynth*)
Wang, G.-Q. *et al., Tet. Lett.*, 2011, **52**, 2719-2721 (*synth*)

Bipinnatone A **B-44**

3-Farnesyl-2′,4,4′,6′-tetrahydroxydihydrochalcone [1065546-02-2]



R = $-CH_2CH{=}C(CH_3)_2$

$C_{30}H_{38}O_5$ 478.627

Constit. of the aerial parts of *Boronia bipinnata*. Moderate inhibitor of hemiglobinase II. Yellow gum. λ_{max} 223 (log ϵ 4.31); 287 (log ϵ 4.25) (MeOH).

Carroll, A.R. *et al., J. Nat. Prod.*, 2008, **71**, 1479-1480 (*Bipinnatone A, activity*)

Zhao, X.L. *et al., Chin. Chem. Lett.*, 2011, **22**, 1135-1138 (*synth*)

Bipinnatone B **B-45**

3-Geranyl-2′,4,4′,6′-tetrahydroxydihydrochalcone [1065546-06-6]

As Bipinnatone A, B-44 with R = H

$C_{25}H_{30}O_5$ 410.509

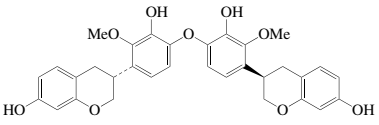
Constit. of the aerial parts of *Boronia bipinnata*. Moderate inhibitor of hemoglobinase II. Yellow gum. λ_{max} 227 (log ϵ 4.36); 288 (log ϵ 4.38) (MeOH).

Carroll, A.R. *et al., J. Nat. Prod.*, 2008, **71**, 1479-1480 (*Bipinnatone B, activity*)

Zhao, X.L. *et al., Chin. Chem. Lett.*, 2011, **22**, 1135-1138 (*synth*)

Biscyclolobin **B-46**

*3,3′-[Oxybis(3-hydroxy-2-methoxy-4,1-phenylene)]-bis[3,4-dihydro-2*H*-1-benzopyran-7-ol], CAS* [58219-01-5]



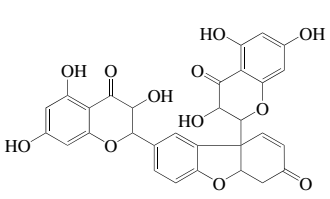
$C_{32}H_{30}O_9$ 558.584

Tentative struct. Constit. of heartwood of *Cyclolobium clausseni*. Mp 220-223°.

Gottlieb, O.R. *et al., Phytochemistry*, 1975, **14**, 2495-2499 (*Biscyclolobin, ord, struct*)

8,9*b*-Bis(3,4-dihydro-3,5,7-trihydroxy-4-oxo-2*H*-1-benzopyran-2-yl)-4*a*,9*b*-dihydro-3(4*H*)-dibenzofuranone, 9CI **B-47**

1‴,2‴,3‴,4‴-Tetrahydro-3,3″,5,5″,7,7″-hexahydroxy-4‴-oxo-(3′→1‴,4′→O→2‴)-biflavanone [144224-03-3]

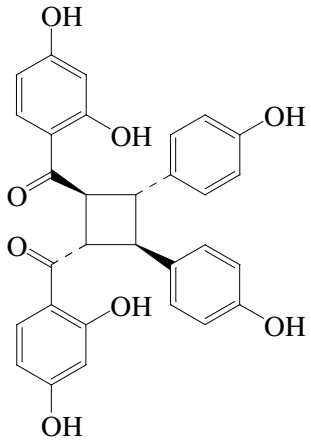


$C_{30}H_{22}O_{12}$ 574.497

Isol. from the moss *Hypnum cupressiforme*. Amorph. solid.

Sievers, H. *et al., Phytochemistry*, 1992, **31**, 3233-3287 (*Hypnum cupressiforme constit*)

1,2-Bis(2,4-dihydroxybenzoyl)-3,4-bis(4-hydroxyphenyl)cyclobutane **B-48**



$C_{30}H_{24}O_8$ 512.515

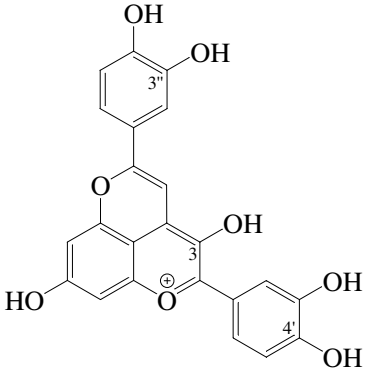
(1α,2β,3α,4β)-*form* [861706-38-9]

Constit. of the roots of *Agapanthus africanus*. Yellow oil.

Kamara, B.I. *et al., Phytochemistry*, 2005, **66**, 1126-1132 (*Agapanthus africanus constit, synth, cd, struct*)

2,5-Bis(3,4-dihydroxyphenyl)-3,8-dihydroxypyrano[4,3,2-*de*]-1-benzopyrylium(1+) **B-49**

Cyanidin-4-vinylcatechol



$C_{23}H_{15}O_8^{\oplus}$ 419.367

3-O-[β-D-Xylopyranosyl-(1→2)-β-D-galactopyranoside]: [753478-53-4]
$C_{34}H_{33}O_{17}^{\oplus}$ 713.625
Constit. of black carrot juice (*Daucus carota* ssp. *sativus* var. *atrorubens*).

3-O-[4-Hydroxy-3-methoxycinnamoyl-(→6)-β-D-glucopyranosyl-(1→6)-[β-D-xylopyranosyl-(1→2)]-β-D-galactopyranoside]: [753478-55-6]
$C_{50}H_{51}O_{25}^{\oplus}$ 1051.938
Constit. of black carrot juice (*Daucus carota* ssp. *sativus* var. *atrorubens*).

3-O-[4-Hydroxy-3,5-dimethoxycinnamoyl-(1→6)-β-D-galactopyranosyl-(1→6)-[β-D-xylopyranosyl-(1→2)]-β-D-galactopyranoside]: [753478-56-7]
$C_{51}H_{53}O_{26}^{\oplus}$ 1081.964
Constit. of black carrot juice (*Daucus carota* ssp. *sativus* var. *atrorubens*).

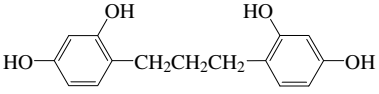
3″-Me ether, 3-O-[β-D-xylopyranosyl-(1→2)-β-D-galactopyranoside]: [753478-57-8]
$C_{35}H_{35}O_{17}^{\oplus}$ 727.651
Constit. of black carrot juice (*Daucus carota* ssp. *sativus* var. *atrorubens*).

3″-Me ether, 3-O-[4-hydroxy-3-methoxycinnamoyl-(→6)-β-D-glucopyranosyl-(1→6)-[β-D-xylopyranosyl-(1→2)]-β-D-galactopyranoside]: [753478-58-9]
$C_{51}H_{53}O_{25}^{\oplus}$ 1065.965
Constit. of black carrot juice (*Daucus carota* ssp. *sativus* var. *atrorubens*).

Schwarz, M. *et al., J. Agric. Food Chem.*, 2004, **52**, 5095-5101 (*Daucus carota constits, struct*)

1,3-Bis(2,4-dihydroxyphenyl)propane **B-50**

4,4′-(1,3-Propanediyl)bis[1,3-benzenediol], 9CI. BDP [191044-02-7]



$C_{15}H_{16}O_4$ 260.289

Constit. of the dried rhizomes of *Dioscorea composita*. Used in skin lightening cosmetics. Strong inhibitory effect on tyrosinase activity. Yellow needles. Mp 179-181°. λ_{max} 207; 257; 287 (no solvent reported).

4′-O-β-D-Glucopyranoside: [440360-21-4]
$C_{21}H_{26}O_9$ 422.431
Constit. of the dried rhizomes of *Dioscorea composita*. Used in skin lightening cosmetics. Yellow powder. Mp 207-209°. $[\alpha]_D^{22}$-40.9 (c, 0.004 in MeOH). λ_{max} 205; 280 (no solvent reported).

4′,4″-Di-Me ether: [862510-10-9] *1,3-Bis(2-hydroxy-4-methoxyphenyl)propane*
$C_{17}H_{20}O_4$ 288.343
Constit. of the dried rhizomes of *Dioscorea composita*. Cryst. Mp 68-72°. λ_{max} 204; 280 (no solvent reported).

Uchiwa, H. *et al., Fragrance J.*, 2002, **30**, 33-37 (*use, activity*)

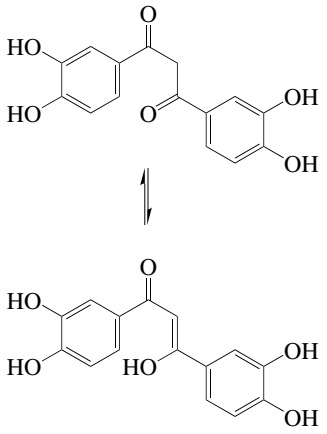
Japan. Pat., 2002, 2002 193 990 (*glucopyranoside, use*)

Yang, S.L. *et al., Chin. Chem. Lett.*, 2005, **16**, 57-60 (*Dioscorea composita constits*)

UK Pat., 2005, 2 412 866 (*use*)

1,3-Bis(3,4-dihydroxyphenyl)-1,3-propanedione B-51

β,3,3′,4,4′-Pentahydroxychalcone. 1,3-Bis(3,4-dihydroxyphenyl)-3-hydroxy-2-propen-1-one



$C_{15}H_{12}O_6$ 288.256

3,4:3′,4′-Bis(methylene) ether: [204397-06-8] *β-Hydroxy-3,4:3′,4′-bis(methylenedioxy)chalcone. 1,3-Bis(1,3-benzodioxol-5-yl)-3-hydroxy-2-propen-1-one,* CAS. ***Galiposin***

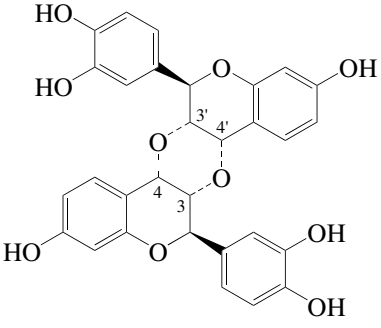
$C_{17}H_{12}O_6$ 312.278

Constit. of the bark of *Galipea granulosa*. Yellow needles (MeOH). Mp 185-186°. Exists almost exclusively in the enol form. λ_{max} 238 (log ϵ 4.48); 278 (log ϵ 3.93); 318 (sh) (log ϵ 4.25); 371 (log ϵ 4.8) (MeOH).

Lopez, J.A. *et al., Planta Med.*, 1998, **64**, 76-77 (*Galiposin*)

6,13-Bis(3,4-dihydroxyphenyl)-6*a*,7*a*,13*a*,14*a*-tetrahydro-6*H*,13*H*-[1,4]-dioxino[2,3-*c*:5,6-*c*']bis[1]benzopyran-3,10-diol, 9CI B-52

3′,4′,7-Trihydroxyflavan-(3→O→4)(4→O→3)-3′,4′,7-trihydroxyflavan



(2*R*,2'*R*,3*S*,3'*S*,4α,4'α)-*form*

$C_{30}H_{24}O_{10}$ 544.514

The config. at the C-4 posns. is difficult to determine and so is represented in α/β notation. Literature diagrams are often drawn inverted and so the α/β assignments need to be reversed.

(**2*R*,2′*R*,3*S*,3′*S*,4α,4′α)-*form*** [22333-53-5]

Constit. of the heartwood of *Acacia mearnsii*.

Hexa-Me ether: [22333-54-6]

Cryst. (EtOH aq.). Mp 175° Mp 179°. $[\alpha]_D^{20}$ +102 (c, 0.12 in Me_2CO).

(**2*R*,2′*R*,3*S*,3′*S*,4α,4′β)-*form*** [88154-69-2]

Constit. of the heartwood of *Acacia mearnsii*.

Hexa-Me ether: [88195-32-8]

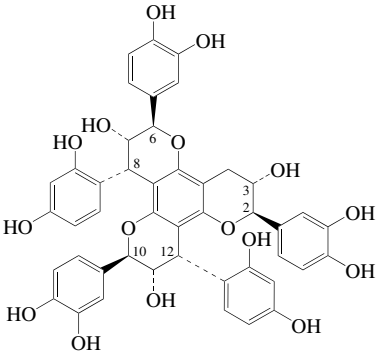
Fine needles. Mp 264°.

Drewes, S.E. *et al., JCS(C)*, 1969, 897 (*2R,2′R,3S,3′S,4α,4′α-form*)

Young, D.A. *et al., JCS Perkin 1*, 1983, 2031 (*Acacia mearnsii constits, synth*)

4,8-Bis(2,4-dihydroxyphenyl)-2,6,10-tris(3,4-dihydroxyphenyl)-3,4,7,8,11,12-hexahydro-2*H*,6*H*,10*H*-benzo[1,2-*b*,3,4-*b*',5,6-*b*'']tripyran-3,7,11-triol, 9CI B-53

[102258-24-2]



$C_{45}H_{38}O_{16}$ 834.786

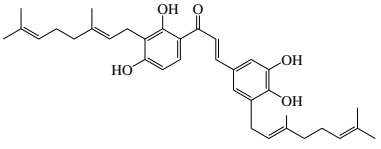
Constit. of heartwood of *Colophospermum mopane*.

Steynberg, J.P. *et al., JCS Perkin 1*, 1990, 235-240 (*Colophospermum mopane constit, struct*)

Bonnet, S.L. *et al., Phytochemistry*, 1996, **43**, 215-228 (*struct, synth*)

Bonnet, S.L. *et al., Phytochemistry*, 1996, **43**, 229-240 (*struct, synth*)

3′,5-Bis(3,7-dimethyl-2,6-octadienyl)-2′,3,4,4′-tetrahydroxychalcone B-54



$C_{35}H_{44}O_5$ 544.73

(***E*,*E*)-*form*** [441772-63-0]

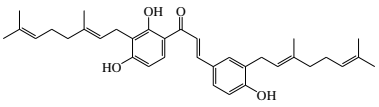
3′,5-Digeranyl-2′,3,4,4′-tetrahydroxychalcone. ***Prorepensin***.

Constit. of the twigs of *Dorstenia prorepens*. Yellow-brown oil. λ_{max} 268 (log ϵ 4.02); 389 (log ϵ 4.18) (MeOH).

Abegaz, B.M. *et al., Phytochemistry*, 2002, **59**, 877-883 (*Prorepensin, struct*)

Jung, E.M. *et al., Bull. Korean Chem. Soc.*, 2009, **30**, 2563-2566 (*synth*)

3,3′-Bis(3,7-dimethyl-2,6-octadienyl)-2′,4,4′-trihydroxychalcone B-55



$C_{35}H_{44}O_4$ 528.73

(***all-E*)-*form***

3,3′-Digeranyl-2′,4,4′-trihydroxychalcone

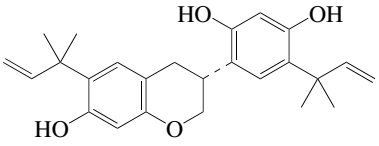
Constit. of *Dorstenia proropens*.

Abegaz, B.M. *et al., Curr. Org. Chem.*, 2000, **4**, 1079-1090 (*Dorstenia proropens constit*)

Majinda, R.R.T. *et al., Pure Appl. Chem.*, 2001, **73**, 1197-1208 (*occur*)

5′,6-Bis(1,1-dimethyl-2-propenyl)-2′,4′,7-trihydroxyisoflavan B-56

Manuifolin E



$C_{25}H_{30}O_4$ 394.51

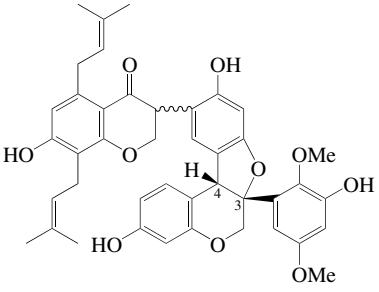
(***R*)-*form*** [196092-31-6]

Constit. of the roots of *Maackia tenuifolia*. Light yellow gum. $[\alpha]_D$-34.4 (c, 0.2 in MeOH). λ_{max} 207 (log ϵ 4.56); 286 (log ϵ 3.74) (MeOH).

Zeng, J.-F. *et al., J. Nat. Prod.*, 1997, **60**, 918-920 (*Manuifolin E, cd, struct*)

Biseryvarin A B-57

Dieryvarin A [1346016-50-9]



Relative Configuration

$C_{42}H_{42}O_{10}$ 706.788

Constit. of the root of *Erythrina variegata*. Amorph. powder. $[\alpha]_D$-47 (c, 0.1 in MeOH). λ_{max} 209 (log ϵ 4.71); 225 (sh) (log ϵ 4.61); 288 (log ϵ 4.35); 329 (sh) (log ϵ 3.86) (MeOH).

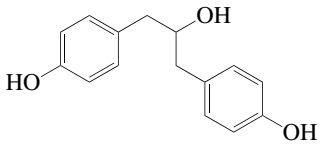
Tetra-Ac: [1346016-51-0]

Amorph. powder. $[\alpha]_D$0 (c, 0.1 in MeOH). λ_{max} 208 (log ϵ 4.71); 220 (log ϵ 4.69); 264 (sh) (log ϵ 4.1); 285 (log ϵ 4.14); 326 (log ϵ 3.72) (MeOH).

Tanaka, H. *et al., Nat. Prod. Commun.*, 2010, **5**, 1781-1784 (*Biseryvarin A*)

1,3-Bis(4-hydroxyphenyl)-2-propanol B-58

4-Hydroxy-α-[(4-hydroxyphenyl)-methyl]benzeneethanol, 9CI. ***Propterol*** [91793-46-3]

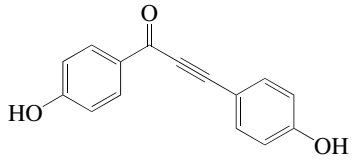


$C_{15}H_{16}O_3$ 244.29
Constit. of *Pterocarpus marsupium*. Exhibits antibacterial props. Prisms. Sol. MeOH, $CHCl_3$; poorly sol. H_2O. Mp 173°. λ_{max} 226 (ϵ 17400); 278 (ϵ 3460) (MeOH) (Berdy).

Rao, A.V.S. *et al., Phytochemistry*, 1984, **23**, 897-898 (*Propterol, activity*)
Maurya, R. *et al., J. Nat. Prod.*, 1985, **48**, 313-315 (*synth*)

1,3-Bis(4-hydroxyphenyl)-2-propyn-1-one B-59

Anemarchalconyn [1187957-99-8]



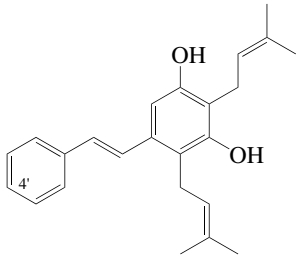
$C_{15}H_{10}O_3$ 238.242
Constit. of the rhizomes of *Anemarrhena asphodeloides*. Exhibits potent inhibitory effect against the differentiation of preadipocyte 3T3-L1 cells. Yellow powder. λ_{max} 250 (log ϵ 3.7); 320 (log ϵ 3.9) (MeOH).

Di-Me ether: [65418-71-5] *1,3-Bis(4-methoxyphenyl)-2-propyn-1-one*
$C_{17}H_{14}O_3$ 266.296
Pale yellow solid. Mp 99-100°.

Youn, U.J. *et al., J. Nat. Prod.*, 2009, **72**, 1895-1898 (*Anemarchalconyn, activity*)
Chen, J.-Y. *et al., Tetrahedron*, 2009, **65**, 10134-10141 (*di-Me ether*)

2,4-Bis(3-methyl-2-butenyl)-5-(2-phenylethenyl)-1,3-benzenediol, 9CI B-60

3,5-Dihydroxy-2,4-diprenylstilbene. 2,4-Diprenyl-5-styrylresorcinol. ***Longistylin B*** [64095-61-0]



$C_{24}H_{28}O_2$ 348.484
Isol. from root bark and stem bark of *Lonchocarpus violaceus* (= *Lonchocarpus longistylus*). Cryst. (hexane). Mp 64-65°.

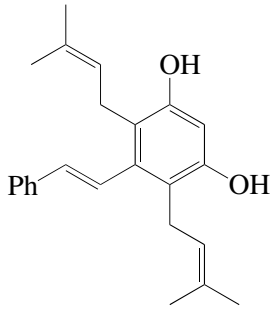
Mono-Me ether: [350593-32-7] *3-Hydroxy-5-methoxy-4,6-diprenylstilbene.* ***Chiricanin C***
$C_{25}H_{30}O_2$ 362.511
Constit. of *Lonchocarpus chiricanus*. Antifungicide against *Cladosporium cucumerinum* and larvicide against *Aedes aegypti*. Amorph. yellow powder. Mp 82-85°. λ_{max} 208 (log ϵ 4.22); 230 (sh) (log ϵ 3.96); 304 (log ϵ 3.96) (MeOH).

4′-Hydroxy: [488836-50-6] *5-[2-(4-Hydroxyphenyl)ethenyl]-2,4-bis(3-methyl-2-butenyl)-1,3-benzenediol. 3,4′,5-Trihydroxy-2,4-diprenylstilbene.* ***Flavestin C***
$C_{24}H_{28}O_3$ 364.483
Constit. of the roots of *Glycyrrhiza flavescens*.

Delle Monache, F. *et al., J. Nat. Prod.*, 1977, **40**, 201-208 (*Longistylin B*)
Marta, M. *et al., Gazz. Chim. Ital.*, 1979, **109**, 323-324 (*synth*)
Ioset, J.-R. *et al., J. Nat. Prod.*, 2001, **64**, 710-715 (*Chiricanin C, activity*)
Kusano, G. *et al., Nat. Med. (Tokyo)*, 2002, **56**, 129-135 (*Flavestin C*)

4,6-Bis(3-methyl-2-butenyl)-5-(2-phenylethenyl)-1,3-benzenediol, 9CI B-61

3,5-Dihydroxy-2,6-diprenylstilbene. 5-Cinnamyl-4,6-diprenylresorcinol. ***Longistylin D*** [64095-62-1]

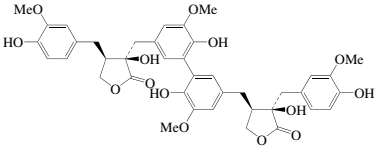


$C_{24}H_{28}O_2$ 348.484
Constit. of *Lonchocarpus violaceus* (*Lonchocarpus longistylus*), *Lonchocarpus peninsularis* and *Lonchocarpus chiricanus*. Antifungicide against *Cladosporium cucumerinum* and larvicide against *Aedes aegypti*. Cryst. (hexane or CH_2Cl_2/hexane). Mp 89-91°. λ_{max} 203 (4.51); 279 (3.94) (MeOH).

Delle Monache, F. *et al., J. Nat. Prod.*, 1977, **40**, 201-208 (*Lonchocarpus violaceus constit*)
Delle Monache, F. *et al., Phytochemistry*, 1978, **17**, 1812-1813 (*Lonchocarpus peninsularis constit*)
Marta, M. *et al., Gazz. Chim. Ital.*, 1979, **109**, 323-324 (*synth*)
Ioset, J.-R. *et al., J. Nat. Prod.*, 2001, **64**, 710-715 (*Lonchocarpus chiricanus constit, activity*)

5,5′-Bisnortrachelogenin B-62

5,5′-Biswikstromol. 5,5′-Dinortrachelogenin [870480-56-1]



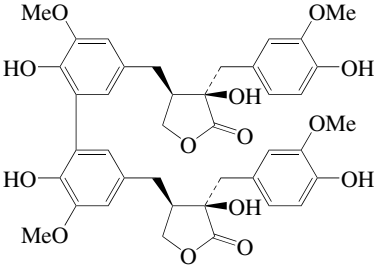
Absolute Configuration

$C_{40}H_{42}O_{14}$ 746.763
Constit. of the roots of *Wikstroemia indica*. Light yellow oil. $[\alpha]_D^{23}$ +68.1 (c, 0.42 in MeOH). λ_{max} 280 (log ϵ 4.22) (MeOH).

Wang, L.-Y. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1348-1351 (*5,5′-Bisnortrachelogenin*)

5′,5′-Bisnortrachelogenin B-63

5′,5′-Biswikstromol. 5′,5′-Dinortrachelogenin



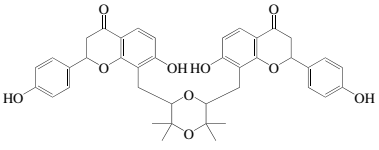
Absolute Configuration

$C_{40}H_{42}O_{14}$ 746.763
Constit. of the roots of *Wikstroemia indica*. Inhibits NO production. Light yellow oil. $[\alpha]_D^{23}$ +55 (c, 0.1 in MeOH). λ_{max} 205 (log ϵ 4.98); 284 (log ϵ 4.07) (MeOH).

Wang, L.-Y. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1348-1351 (*Bisnortrachelogenin*)

Bissigmodiol B-64

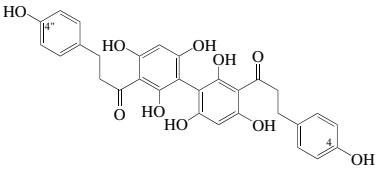
bis-*Sigmodiol* [1342296-07-4]



$C_{40}H_{40}O_{10}$ 680.75
Constit. of the stem bark of *Erythrina sigmoidea*. Amorph. yellow solid. $[\alpha]_D^{28}$ 0 (c, 0.08 in $CHCl_3$). λ_{max} 284 (log ϵ 4.24) (MeOH).

Ali, M.S. *et al., J. Asian Nat. Prod. Res.*, 2011, **13**, 182-187 (*bis-Sigmodiol*)

3′,3‴-Bis(2′,4,4′,6′-tetrahydroxydihydrochalcone) B-65



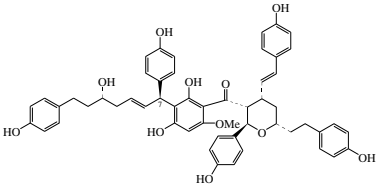
$C_{30}H_{26}O_{10}$ 546.529

4,4″-Di-Me ether: [198137-78-9] *3′,3‴-Bis(2′,4′,6′-trihydroxy-4-methoxydihydrochalcone)*
$C_{32}H_{30}O_{10}$ 574.583
Constit. of *Iryanthera sagotiana*. $[\alpha]_D^{21}$-8 (c, 0.2 in MeOH).

Silva, D.H.S. *et al., Phytochemistry*, 1997, **46**, 579-582 (*Iryanthera sagotiana constits, struct*)

Blepharocalyxin A B-66

[183137-69-1]



Absolute configuration

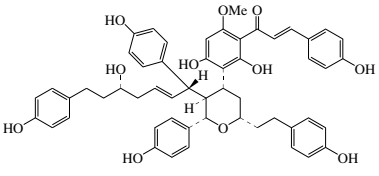
$C_{54}H_{54}O_{11}$ 879.014
Constit. of the seeds of *Alpinia blepharocalyx*. Immunoregulator. Inhibits nitric oxide production in murine macrophages. Pale yellow amorph. solid. $[\alpha]_D$-56.4 (c, 0.2 in MeOH).

7-Epimer: [183254-62-8] ***Blepharocalyxin B***
$C_{54}H_{54}O_{11}$ 879.014
Constit. of the seeds of *Alpinia blepharocalyx*. Immunoregulator. Inhibits nitric oxide production in murine macrophages. Pale yellow amorph. solid. $[\alpha]_D$-97.7 (c, 0.2 in MeOH).

Kadota, S. *et al., Tet. Lett.*, 1996, **37**, 7283-7286 (*Blepharocalyxins A,B, activity*)
Prasain, J.K. *et al., J. Nat. Prod.*, 1998, **61**, 212-216 (*Blepharocalyxins A,B, struct*)
Ali, M.S. *et al., Biol. Pharm. Bull.*, 2001, **24**, 525-528 (*Blepharocalyxins A,B, activity*)

Blepharocalyxin E B-67

[294855-53-1]

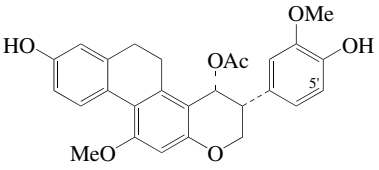


$C_{54}H_{54}O_{11}$ 879.014
Constit. of the seeds of *Alpinia blepharocalyx*. Cytotoxic agent. Amorph. light yellow powder. $[\alpha]_D^{25}$ +145.5 (c, 0.02 in MeOH).

Tezuka, Y. *et al., Tet. Lett.*, 2000, **41**, 5903-5907 (*Blepharocalyxin E, activity*)
Ali, M.S. *et al., J. Nat. Prod.*, 2001, **64**, 491-496 (*Blepharocalyxin E, activity*)

Bletilol B B-68

[147235-17-4]



$C_{27}H_{26}O_7$ 462.498
Constit. of the tubers of *Bletilla striata* and *Pleione bulbocodioides*. Powder. $[\alpha]_D$-87 (c, 0.48 in MeOH). λ_{max} 284 (ϵ 27500); 306 (sh) (ϵ 19050); 321 (sh) (ϵ 12000) (MeOH).

O-*De-Ac:* [211229-83-3] ***Shanciol F***
$C_{25}H_{24}O_6$ 420.461
Constit. of the tubers of *Pleione bulbocodioides* and *Pleione yunnanensis*. Powder. $[\alpha]_D$-8.3 (MeOH). Relative config. only known. λ_{max} 211 (log ϵ 4.69); 282 (log ϵ 4.34); 310 (sh) (log ϵ 4.06) (MeOH).

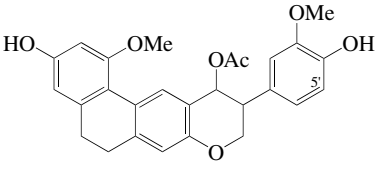
5′-Methoxy: [147235-16-3] ***Bletilol A***
$C_{28}H_{28}O_8$ 492.524
Constit. of the tubers of *Bletilla striata*. Powder. $[\alpha]_D$-10.6 (c, 0.41 in MeOH). λ_{max} 284 (ϵ 16200); 305 (sh) (ϵ 10700); 320 (sh) (ϵ 6020) (MeOH).

5′-Methoxy, O-*de-Ac:* [208106-54-1] ***Shanciol C***
$C_{26}H_{26}O_7$ 450.487
Constit. of *Pleione bulbocodioides*. Oil. $[\alpha]_D$-8.2 (c, 0.2 in MeOH). λ_{max} 250 (log ϵ 4.21); 281 (log ϵ 4.39); 320 (sh) (log ϵ 4.11) (MeOH).

Yamaki, M. *et al., Phytochemistry*, 1993, **32**, 427-430 (*Bletilols*)
Bai, L. *et al., Phytochemistry*, 1996, **41**, 625-628 (*Bletilol B, Shanciols, cryst struct*)
Bai, L. *et al., Phytochemistry*, 1998, **47**, 1125-1129 (*Bletilol A, Shanciol C, struct*)
Bai, L. *et al., Phytochemistry*, 1998, **48**, 327-331 (*Shanciol F*)
Dong, H. *et al., Magn. Reson. Chem.*, 2010, **48**, 256-260 (*Shanciol F*)

Bletilol C B-69

[147235-18-5]



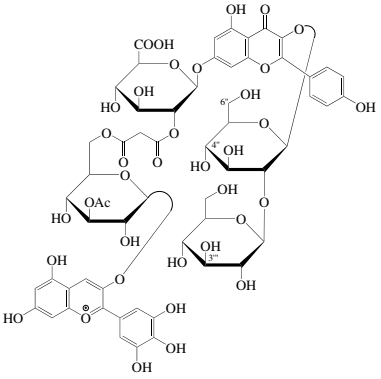
$C_{27}H_{26}O_7$ 462.498
Constit. of the tubers of *Bletilla striata*. Powder. $[\alpha]_D$-6.6 (c, 0.33 in MeOH). λ_{max} 234 (sh) (ϵ 27500); 274 (sh) (ϵ 20900); 285 (ϵ 28200); 302 (ϵ 23400) (MeOH).

5′-Methoxy, O-*de-Ac:* [208106-55-2] ***Shanciol D***
$C_{26}H_{26}O_7$ 450.487
Constit. of *Pleione bulbocodioides*. Oil. $[\alpha]_D$ +2 (c, 0.3 in MeOH). Possesses *trans*-config. λ_{max} 250 (log ϵ 4.18); 281 (log ϵ 4.36); 300 (log ϵ 4.3) (MeOH).

Yamaki, M. *et al., Phytochemistry*, 1993, **32**, 427-430 (*Bletilol C*)
Bai, L. *et al., Phytochemistry*, 1998, **47**, 1125-1129 (*Shanciol D*)

Allium Blue anthocyanin 2 B-70

ABA 2 [1391730-83-8]



$C_{59}H_{61}O_{37}^{\oplus}$ 1362.109
Constit. of violet blue flowers of *Allium* 'blue perfume'. Dark violet powder. λ_{max} 540 (sh); 573; 612 (acetate buffer pH 6). λ_{max} 268; 350; 550 (MeOH/0.1% HCl).

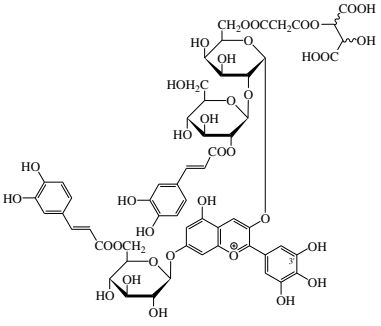
*4″-O-(4-Hydroxy-*E*-cinnamoyl), 3‴,6″-di-O-β-D-glucopyranosyl:* [1393600-07-1] **Allium *Blue anthocyanin 1***. *ABA 1*
$C_{80}H_{87}O_{49}^{\oplus}$ 1832.538
Constit. of violet blue flowers of *Allium* 'blue perfume'. Dark violet powder. λ_{max} 272; 289; 315; 350; 552 (MeOH/0.1% HCl). λ_{max} 540 (sh); 574; 618 (acetate buffer pH 6).

*4″-O-(4-Hydroxy-*Z*-cinnamoyl), 3‴,6″-di-O-β-D-glucopyranosyl:* [1393600-17-3] **Allium *Blue anthocyanin 3***. *ABA 3*†
$C_{80}H_{87}O_{49}^{\oplus}$ 1832.538
Constit. of violet blue flowers of *Allium* 'blue perfume'. Dark violet powder. λ_{max} 271; 284; 350; 552 (MeOH/0.1% HCl). λ_{max} 539 (sh); 572; 617 (acetate buffer pH 6).

Saito, N. *et al., Phytochemistry*, 2012, **80**, 99-108 (*ABAs 1,2,3*)

Anemone Blue anthocyanin 4 B-71

ABA 4 [462122-47-0]



$C_{58}H_{59}O_{36}^{\oplus}$ 1332.083

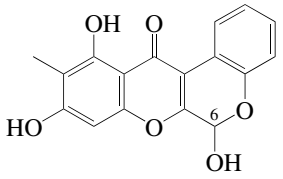
Complex glycoside of 3,3′,4′,5,5′,7-Hexahydroxyflavylium(1+), H-139. Constit. of the flowers of *Anemone coronaria*. Conts. novel tartaroylmalonyl substit. λ_{max} 288; 332; 524 (MeOH/HCl aq.).

3′-O-β-D-Glucuronopyranoside: [462122-46-9] **Anemone *Blue anthocyanin 3*.** *ABA 3*†
$C_{64}H_{67}O_{42}^{\oplus}$ 1508.208
Constit. of the flowers of *Anemone coronaria*. λ_{max} 288; 332; 537 (MeOH/HCl aq.).

Saito, N. *et al., Phytochemistry*, 2002, **60**, 365-373 (*Anemone coronaria constits, struct*)

Boeravinone B B-72

*6,9,11-Trihydroxy-10-methyl[1]benzopyrano[3,4-*b*][1]benzopyran-12(6*H*)-one, 9CI*



$C_{17}H_{12}O_6$ 312.278
CAS numbering shown.

(-)-form
Constit. of root of *Mirabilis jalapa*. Cytotoxic to human hepatoma BEL-7402, lung adenocarcinoma A5419 and leukaemia K562 cells. $[\alpha]_D^{23}$-2.44 (c, 0.003 in MeOH).

(±)-form [114567-34-9]
Constit. of the roots of *Boerhaavia diffusa*. Yellow powder.

6-Me ether: [114567-33-8] ***Boeravinone A***
$C_{18}H_{14}O_6$ 326.305
Constit. of the roots of *Boerhaavia diffusa*. Yellow needles (MeOH/CH_2Cl_2). Mp 215-217°. λ_{max} 215 (ε 23442); 263 (ε 1023); 289 (ε 11220) (MeOH).

3-Hydroxy: [137787-00-9] ***Boeravinone E***
$C_{17}H_{12}O_7$ 328.278
Constit. of the roots of *Boerhaavia diffusa*. Amorph. yellow solid. λ_{max} 217 (log ε 3.33); 278 (log ε 3.86); 300 (sh) (log ε 3.65); 349 (sh) (log ε 3.09) (MeOH).

3-Hydroxy, 6-Me ether: [137786-99-3] ***Boeravinone D***
$C_{18}H_{14}O_7$ 342.304
Constit. of the roots of *Boerhaavia diffusa*. Pale yellow amorph. solid. λ_{max} 217 (log ε 4.49); 277 (log ε 4.53); 301 (sh) (log ε 4.28); 348 (sh) (log ε 3.71) (MeOH).

3-Hydroxy, 9-Me ether: [485811-84-5] *3-Hydroxy-9-O-methylboeravinone B.* ***Mirabijalone D***
$C_{18}H_{14}O_7$ 342.304
Constit. of the roots of *Mirabilis jalapa*. Yellow solid. Mp > 310°.

3-Hydroxy, 6-ketone: [137810-40-3] ***Boeravinone F***
$C_{17}H_{10}O_7$ 326.262
Constit. of the roots of *Boerhaavia diffusa* and *Mirabilis jalapa*. Bright yellow amorph. solid. λ_{max} 217 (log ε 4.4); 265 (log ε 4.05); 294 (log ε 4.33); 330 (log ε 3.85) (MeOH).

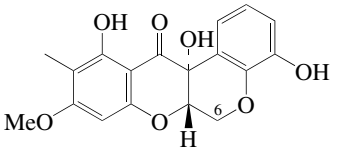
4-Hydroxy, 9-Me ether: [333798-10-0] ***4-Hydroxy-9-O-methylboeravinone B***
$C_{18}H_{14}O_7$ 342.304
Constit. of a manipulated culture of *Mirabilis jalapa*. Antifungal agent. Amorph. powder. λ_{max} 217 (log ε 4.67); 274 (log ε 4.58); 321 (log ε 3.87); 328 (log ε 3.86) (MeOH).

4-Hydroxy, 6,9-di-Me ether: [883748-82-1] ***Boeravinone H***
$C_{19}H_{16}O_7$ 356.331
Constit. of the roots of *Boerhaavia diffusa*. Potent breast cancer resistance protein inhibitor. Pale yellow solid. λ_{max} 279 (log ε 4.5); 302 (log ε 4.3); 345 (log ε 3.7) (MeCN).

Kadota, S. *et al., Chem. Pharm. Bull.*, 1989, **37**, 3214-3220 (*Boeravinones A,B*)
Lami, N. *et al., Chem. Pharm. Bull.*, 1991, **39**, 1863-1865 (*Boeravinones D,E,F*)
Gupta, J. *et al., Indian J. Chem., Sect. B*, 1998, **37**, 912-917 (*Boeravinone A*)
Yang, S.-W. *et al., J. Nat. Prod.*, 2001, **64**, 313-317 (*4-Hydroxy-9-O-methylboeravinone B*)
Wang, Y.-F. *et al., Helv. Chim. Acta*, 2002, **85**, 2342-2348 (*Mirabijalone D, Boeravinone F*)
Borrelli, F. *et al., Planta Med.*, 2005, **71**, 928-932 (*Boeravinone H*)
Ahmed-Belkacem, A. *et al., J. Med. Chem.*, 2007, **50**, 1933-1938 (*Boeravinones A,B,C,E,H, activity*)
Xu, J.J. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2010, **46**, 792-794 (*(-)-form, activity*)

Boeravinone C B-73

*6a,12a-Dihydro-4,11,12a-trihydroxy-9-methoxy-10-methyl[1]benzopyrano[3,4-*b*][1]benzopyran-12(6*H*)-one, 9CI* [117176-19-9]



Relative Configuration

$C_{18}H_{16}O_7$ 344.32
Constit. of *Abronia villosa*, *Boerhaavia diffusa* and *Mirabilis jalpa*. Pale yellow needles ($CHCl_3$). Mp 248-249°. $[\alpha]_D$-459.9 (c, 0.15 in Me_2CO).

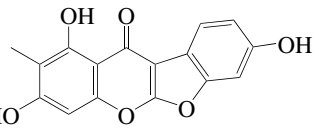
4-Deoxy: [1345683-80-8] ***Abronione***
$C_{18}H_{16}O_6$ 328.321
Constit. of *Abronia villosa*. Cytotoxic; exhibits moderate activity against NCI-H460 and HL-60 human cancer cell lines. Solid. $[\alpha]_D^{25}$-633 (c, 0.07 in Me_2CO).

6β-Methoxy: [333798-11-1] ***6-Methoxyboeravinone C***
$C_{19}H_{18}O_8$ 374.346
Constit. of a manipulated culture of *Mirabilis jalapa*. Exhibits moderate antifungal activity against *Candida albicans*. Amorph. powder. λ_{max} 258 (log ε 4.67); 284 (log ε 4.37); 332 (log ε 4.13) (MeOH).

Kadota, S. *et al., Chem. Pharm. Bull.*, 1988, **36**, 2289-2292 (*Boerhaavia diffusa constit, struct*)
Lami, N. *et al., Chem. Pharm. Bull.*, 1990, **38**, 1558-1562 (*Boeravinone C*)
Yang, S.-W. *et al., J. Nat. Prod.*, 2001, **64**, 313-317 (*6-Methoxyboeravinone C, activity*)
Yi-Fen, W. *et al., Helv. Chim. Acta*, 2002, **85**, 2342-2348 (*Mirabilis jalapa constit*)
Borelli, F. *et al., J. Nat. Prod.*, 2006, **69**, 903-906 (*Boerhaavia diffusa constit*)
Ahmed-Belkacem, A. *et al., J. Med. Chem.*, 2007, **50**, 1933-1938 (*Boerhaavia diffusa constit*)
Starks, C.M. *et al., Phytochem. Lett.*, 2011, **4**, 72-74 (*Abronione, Boeravinone C*)

Boeravinone J B-74

*1,3,8-Trihydroxy-2-methyl-11*H*-benzofuro[2,3-*b*][1]benzopyran-11-one*

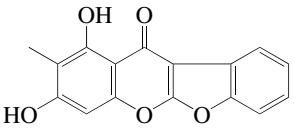


$C_{16}H_{10}O_6$ 298.251
Constit. of the roots of *Boerhaavia diffusa*. Amorph. yellow solid. λ_{max} 276 (log ε 4.4); 340 (log ε 3.4) (MeOH).

Ahmed-Belkacem, A. *et al., J. Med. Chem.*, 2007, **50**, 1933-1938 (*Boeravinone J*)

Boerharotenoid A B-75

*1,3-Dihydroxy-2-methyl-11*H*-benzofuro[2,3-*b*][1]benzopyran-11-one, CAS* [1392203-29-0]

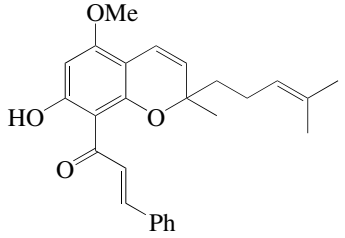


$C_{16}H_{10}O_5$ 282.252
Constit. of *Boerhavia repens*. Amorph. pale yellow powder. λ_{max} 223 (log ε 3.1); 257 (log ε 3.09); 321 (log ε 4.18) (MeOH).

Nazir, M. *et al., Nat. Prod. Commun.*, 2011, **6**, 1651-1652 (*Boerharotenoid A*)

Boesenbergin A B-76

[81943-62-6]



$C_{26}H_{28}O_4$ 404.505
Constit. of rhizomes of *Boesenbergia pandurata*. Cytotoxic to human pancreatic cancer PANC-1 cells. Red needles

(MeOH aq. or MeOH). Mp 89-91°. Opt. inactive. λ_{max} 290 (ϵ 20580); 337 (ϵ 24494) (EtOH).

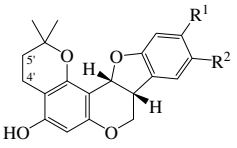
Jaipetch, T. *et al., Aust. J. Chem.*, 1982, **35**, 351-361 (*Boesenbergia pandurata constit, synth, cryst struct*)

Win, N.W. *et al., J. Nat. Prod.*, 2007, **70**, 1582-1587 (*Boesenbergia pandurata constit, activity*)

Lee, Y.R. *et al., Synthesis*, 2007, 3240-3246 (*synth, struct*)

Bolucarpan A B-77

[467465-28-7]



Absolute Configuration

R^1R^2 = $-OCH_2O-$

$C_{21}H_{20}O_6$ 368.385

Constit. of the root bark of *Bolusanthus speciosus*. Exhibits antibacterial activity against *Bacillus subtilis* and antifungal activity against *Candida mycoderma* and *Saccharomyces cerevisiae*. Brown cryst. (Me_2CO). Mp 119-121°. $[\alpha]_D^{25}$-170 (c, 0.005 in MeOH). λ_{max} 210 (log ϵ 4.43); 305 (log ϵ 3.83) (MeOH).

4′,5′-Didehydro: [467465-29-8] ***Bolucarpan B***

$C_{21}H_{18}O_6$ 366.37

Constit. of the root bark of *Bolusanthus speciosus*. Exhibits antibacterial activity against *Bacillus subtilis* and *Staphylococcus aureus*, and antifungal activity against *Candida mycoderma* and *Saccharomyces cerevisiae*. Brown semi-solid. Mp 68-70°. $[\alpha]_D^{25}$-300 (c, 0.004 in MeOH). λ_{max} 207 (log ϵ 4.25); 221 (log ϵ 4.06); 230 (log ϵ 4.4); 272 (log ϵ 3.64); 280; 312 (MeOH).

Bojase, G. *et al., Planta Med.*, 2002, **68**, 615-620 (*Bolucarpans A,B, struct, activity*)

Bolucarpan C B-78

[467465-30-1]

As Bolucarpan A, B-77 with

R^1 = OMe, R^2 = H

$C_{21}H_{22}O_5$ 354.402

Constit. of the root bark of *Bolusanthus speciosus*. Exhibits antifungal activity against *Candida mycoderma* and *Saccharomyces cerevisiae*. Amorph. powder. Mp 78-80°. $[\alpha]_D^{25}$-175 (c, 0.008 in MeOH).

4′,5′-Didehydro: [467465-31-2] ***Bolucarpan D***

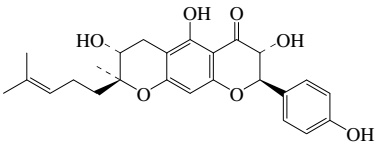
$C_{21}H_{20}O_5$ 352.386

Constit. of the root bark of *Bolusanthus speciosus*. Exhibits antibacterial activity against *Bacillus subtilis* and *Staphylococcus aureus*; antifungal activity against *Candida mycoderma* and *Saccharomyces cerevisiae*. Amorph. powder. Mp 83-85°. $[\alpha]_D^{25}$-240 (c, 0.004 in MeOH). λ_{max} 273; 282; 339 (MeOH).

Bojase, G. *et al., Planta Med.*, 2002, **68**, 615-620 (*Bolucarpans C,D, struct, activity*)

Bonanniol C B-79

[944705-80-0]



Absolute Configuration

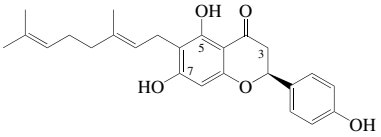
$C_{25}H_{28}O_7$ 440.492

Constit. of *Bonannia graeca*. Mp 83-85°. $[\alpha]_D^{25}$ +18.5 (c, 0.54 in $CHCl_3$).

Rosselli, S. *et al., Eur. J. Org. Chem.*, 2007, 2504-2510 (*Bonanniol C, cd, struct*)

Bonannione A B-80

6-Geranyl-4′,5,7-trihydroxyflavanone. 6-Geranylnaringenin. ***Mimulone A*** [97126-57-3]



$C_{25}H_{28}O_5$ 408.493

Constit. of *Artocarpus communis*, *Bonannia graeca*, *Diplacus aurantiacus*, *Mimulus clevelandii*, *Paulownia tomentosa*, *Schizolaena hystrix*, *Macaranga pleiostemona* and *Macaranga alnifolia*. Antiiflammatory agent. Antioxidant. Mod. potent mixed inhibitor of AChEand BChE. Potential anti-Alzheimers lead. Shows cytotoxic activity against a range of tumour cell lines and significant antibacterial activity against *Escherichia coli* and *Micrococcus luteus*. Shows activity against Gram positive bacteria. Cryst. (C_6H_6/petrol). Mp 120-122°. $[\alpha]_D$-8.2 (c, 0.4 in $CHCl_3$). Early reports incorr. assigned struct. as Sophoraflavone A. λ_{max} 228 (log ϵ 4.42); 292 (log ϵ 4.31); 334 (log ϵ 3.7) (MeOH). λ_{max} 329 (MeOH/NaOH) (Berdy).

4′-Me ether: 6-Geranyl-5,7-dihydroxy-4′-methoxyflavanone. ***4′-O-Methylbonannione A***. *4′*-O-*Methylmimulone A*

$C_{26}H_{30}O_5$ 422.52

Constit. of the fruit of *Schizolaena hystrix*. Pale yellow solid. Mp 133-136°. $[\alpha]_D$-3.2 (c, 0.15 in MeOH). λ_{max} 296 (log ϵ 1.97) (MeOH).

*3*R-*Hydroxy:* [96917-35-0] ***Bonanniol A***

$C_{25}H_{28}O_6$ 424.493

Constit. of *Bonannia graeca* and *Schizolaena hystrix*. Mod. potent cytotoxic agent against a range of tumour cell lines. Amorph. solid. $[\alpha]_D^{18}$ +11.1 (c, 0.7 in $CHCl_3$).

*3*R-*Hydroxy, 5-Me ether:* [96917-37-2] ***Bonanniol B***

$C_{26}H_{30}O_6$ 438.519

Constit. of *Bonannia graeca*. Mod. potent cytotoxic agent against a range of tumour cell lines. Amorph. solid. $[\alpha]_D^{18}$ +33 (c, 0.1 in $CHCl_3$).

Δ‴-Isomer, 6″ξ-hydroxy: [1375496-29-9] ***Mimulone B***

$C_{25}H_{28}O_6$ 424.493

Constit. of the fruit of *Paulownia tomentosa*. Yellow powder. λ_{max} 293 (log ϵ 3.45); 333 (sh) (log ϵ 2.95) (MeOH).

*Δ‴-Isomer, 3*R*,6″ξ-dihydroxy:* [1375496-28-8] ***Tomentomimulol***

$C_{25}H_{28}O_7$ 440.492

Constit. of the fruit of *Paulownia tomentosa*. Yellow powder. λ_{max} 297 (log ϵ 3.7); 325 (sh) (log ϵ 3.4) (MeOH).

Bruno, M. *et al., Heterocycles*, 1985, **23**, 1147-1153 (*Bonannione A, Bonanniol A,B, struct, cd, abs config*)

Wollenweber, E. *et al., Phytochemistry*, 1989, **28**, 3493-3496 (*Diplacus aurantiacus constit*)

Schutz, B.A. *et al., Phytochemistry*, 1995, **40**, 1273-1278 (*Macarnaga pleiostemona constit, antibacterial activity*)

Phillips, W.R. *et al., J. Nat. Prod.*, 1996, **59**, 495-497 (*Mimulus clevelandii constit*)

Wang, Y. *et al., J. Nat. Prod.*, 2001, **64**, 196-199 (*(+/-)-Bonannione A, synth*)

Murphy, B.T. *et al., J. Nat. Prod.*, 2005, **68**, 417-419 (*4′-O-Methylbonannione A*)

Smejkal, K. *et al., J. Nat. Prod.*, 2007, **70**, 1244-1248 (*Mimulone A*)

Smejkal, K. *et al., J. Nat. Prod.*, 2008, **71**, 706-709 (*Mimulone, antibacterial activity*)

Zhang, Y. *et al., Chin. J. Chem.*, 2011, **29**, 521-524 (*(+/-)-4′-O-Methylbonannione, synth*)

Lin, J.-A. *et al., J. Agric. Food Chem.*, 2011, **59**, 105-111 (*Artocarpus communis constit, antiinflammatory activity, antioxidant activity*)

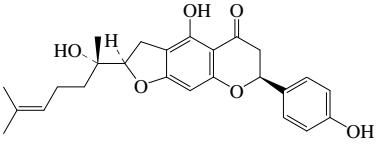
Rosselli, S. *et al., Phytochemistry*, 2011, **72**, 942-945 (*Bonannione A, Bonanniol A.B: cytotox*)

Cho, J.K. *et al., Bioorg. Med. Chem.*, 2012, **20**, 2595-2602 (*Mimulone, AChE, BChE inhibitor*)

Schneiderová, K. *et al., Nat. Prod. Res.*, 2013, **27**, 613-618 (*Mimulone B, Tomentomimulol*)

Bonannione B B-81

[944705-81-1]



$C_{25}H_{28}O_6$ 424.493

Constit. of *Bonannia graeca*. Mp 79-81°. $[\alpha]_D^{25}$-17.7 (c, 3.1 in $CHCl_3$).

*3*R-*Hydroxy:* [1312224-18-2] ***Bonanniol D***

$C_{25}H_{28}O_7$ 440.492

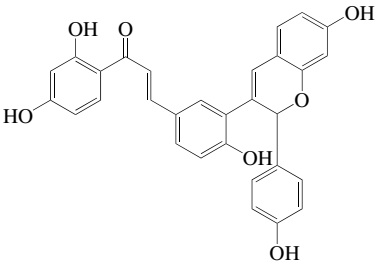
Constit. of the aerial parts of *Bonannia graeca*. Shows *in vitro* cytotoxicity against human tumour cell lines. Amorph. solid. $[\alpha]_D^{25}$-5.8 (c, 1.03 in $CHCl_3$).

Rosselli, S. *et al., Eur. J. Org. Chem.*, 2007, 2504-2510 (*Bonannione B, struct, cd, abs config*)

Rosselli, S. *et al., Phytochemistry*, 2011, **72**, 942-945 (*Bonanniol D, struct, cd, abs config, cytotox*)

Bongosin B-82

[131989-86-1]



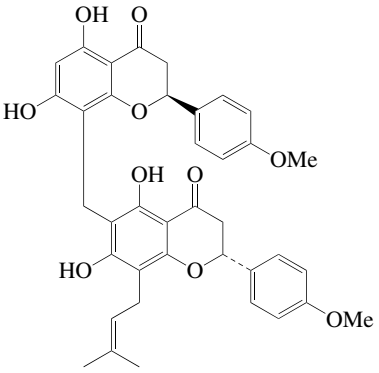
$C_{30}H_{22}O_7$ 494.5

Chalcone dimer. Constit. of the stem bark of *Lophira alata*. Amorph. brown solid. $[\alpha]_D^{20}$ +1 (c, 0.21 in Me_2CO). λ_{max} 207 (ϵ 42660); 225 (ϵ 31600); 250 (ϵ 19050) (EtOH).

Tih, A.E. *et al., J. Nat. Prod.*, 1990, **53**, 964-967 (*Bongosin*)

Bosistoabiflavanone B-83

[146029-63-2]



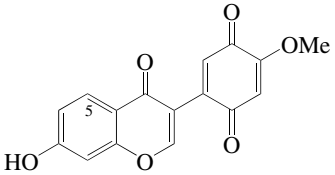
$C_{38}H_{36}O_{10}$ 652.696

Constit. of the leaves of *Bosistoa brassii*. Yellow needles (EtOAc/petrol). Mp 188-191°. $[\alpha]_D$-20 (c, 0.65 in $CHCl_3$).

Parsons, I.C. *et al., J. Nat. Prod.*, 1993, **56**, 46-53 (*Bosistoabiflavanone, struct*)

Bowdichione B-84

*2-(7-Hydroxy-4-oxo-4*H*-1-benzopyran-3-yl)-5-methoxy-2,5-cyclohexadiene-1,4-dione,* 9CI. *7-Hydroxy-4′-methoxy-2′,5′-isoflavonequinone* [53774-75-7]



$C_{16}H_{10}O_6$ 298.251

Constit. of *Bowdichia nitida* and of the heartwood of *Dalbergia parviflora* and *Dalbergia odorifera*. Exhibits cell proliferation stimulatory activity against the MCF-7 human breast cancer cell line. Exhibits significant antiinflammatory activity. Yellow needles (Me_2CO aq.). Mp 269-271°.

5-Hydroxy: [112448-38-1] *5,7-Dihydroxy-4′-methoxy-2′,5′-isoflavonequinone.* ***5-Hydroxybowdichione***
$C_{16}H_{10}O_7$ 314.251
Constit. of *Dalbergia candenatensis*. Yellow cryst. ($CHCl_3$/MeOH). Mp 241-245° dec. λ_{max} 240 (sh); 292; 334 (MeOH/NaOH). λ_{max} 223 (sh); 262; 279; 318 (sh) (MeOH).

3′,6-Dihydroxy, 7-Me ether: [1072412-90-8] *3′,6-Dihydroxy-4′,7-dimethoxy-2′,5′-isoflavonequinone*
$C_{17}H_{12}O_8$ 344.277
Constit. of *Colutea istria*.

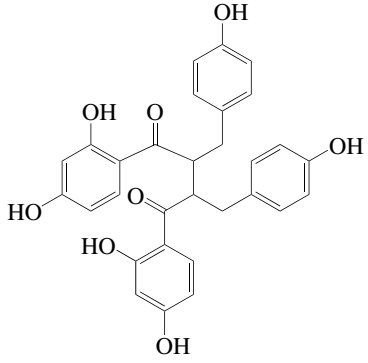
3′-Methoxy, 7-Me ether: [1356005-42-9] *3′,4′,7-Trimethoxy-2′,5′-isoflavonequinone. 3′,7-Dimethoxybowdichione*
$C_{18}H_{14}O_7$ 342.304
Constit. of the resin of *Amburana cearensis*. Orange solid. Mp 196-198°.

6-Methoxy: [849657-94-9] *7-Hydroxy-4′,6-dimethoxy-2′,5′-isoflavonequinone.* ***6-Methoxybowdichione***
$C_{17}H_{12}O_7$ 328.278
Constit. of the heartwood of *Platymiscium floribundum*. Yellow powder. Mp > 300°. λ_{max} 230 (log ϵ 4.43); 256 (log ϵ 4.14); 331 (log ϵ 3.96) (MeOH).

Brown, P.M. *et al., Annalen*, 1974, 1295-1300 (*Bowdichione*)
Hamburger, M. *et al., J. Nat. Prod.*, 1987, **50**, 696-699 (*5-Hydroxybowdichione*)
Chan, S.C. *et al., Planta Med.*, 1998, **64**, 153-158 (*Dalbergia odorifera constit, activity*)
Falcão, M.J.C. *et al., J. Nat. Prod.*, 2005, **68**, 423-426 (*6-Methoxybowdichione*)
Radwan, M.M. *et al., Nat. Prod. Commun.*, 2008, **3**, 1491-1494 (*Colutea istria constit*)
Umehara, K. *et al., J. Nat. Prod.*, 2009, **72**, 2163-2168 (*Dalbergia parviflora constit, activity*)
Bandeira, P.N. *et al., J. Braz. Chem. Soc.*, 2011, **22**, 372-375 (*3′,7-Dimethoxybowdichione*)

Brackenin B-85

1,4-Bis(2,4-dihydroxyphenyl)-2,3-bis[(4-hydroxyphenyl)methyl]-1,4-butanedione, 9CI [89945-88-0]



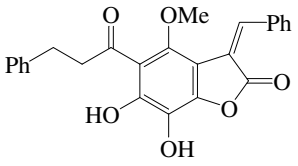
$C_{30}H_{26}O_8$ 514.531

Constit. of *Brackenridgea zanguebarica*. Cream rosettes (C_6H_6/Me_2CO). Mp 255°.

Drewes, S.E. *et al., Phytochemistry*, 1983, **22**, 2823-2825 (*Brackenin, struct*)

Bractelactone B-86

[856419-30-2]



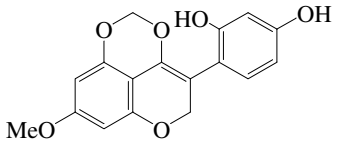
$C_{25}H_{20}O_6$ 416.429

Constit. of the stems of *Fissistigma bracteolatum*. Inhibits NO prodn. Yellow needles. Mp 132-134°.

Lan, Y.-H. *et al., Helv. Chim. Acta*, 2005, **88**, 905-909 (*Bractelactone, struct*)

Brahene B-87

*4-(8-Methoxy-5*H*-pyrano[4,3,2-*de*]-1,3-benzodioxin-4-yl)-1,3-benzenediol,* 9CI. *4-(2,4-Dihydroxyphenyl)-8-methoxy-5*H*-pyrano[4,3,2-*de*]-1,3-benzodioxin*
[249621-32-7]



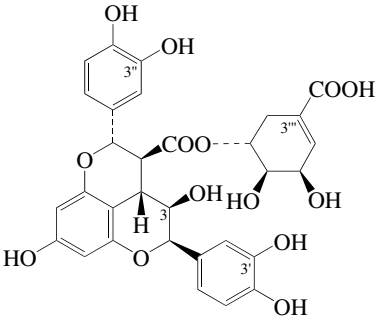
$C_{17}H_{14}O_6$ 314.294

A 4,5-methylenedioxyisoflavene. Constit. of *Stocksia brahuica*. Mp 181-183°.

Ahmad, V.U. *et al., Z. Naturforsch., B*, 1999, **54**, 940-942 (*Brahene, struct*)

Brainicin B-88

[1261956-95-9]



Relative Configuration

$C_{31}H_{28}O_{14}$ 624.554

Constit. of *Brainea insignis*. Exhibits moderate cytotoxicity towards human cancer HL-60, A549 and MCF-7 cells. Amorph. brown powder. Mp 207-209°. $[\alpha]_D^{24}$ +69.8 (c, 0.3 in MeOH). λ_{max} 198 (log ϵ 4.52); 216 (log ϵ 4.74); 292 (log ϵ 4.19) (MeOH).

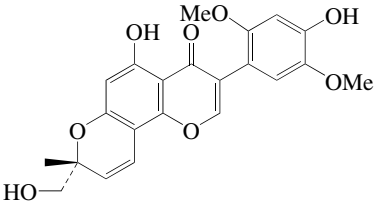
3″-Deoxy: [1426297-10-0] ***Brainin B***
$C_{31}H_{28}O_{13}$ 608.554
Constit. of the rhizomes of *Brainea insignis*. Antioxidant. Amorph. yellow powder. Mp 199-201°. $[\alpha]_D^{20}$ +57.8 (c, 0.2 in MeOH).

*3″-Deoxy, 3‴,4‴-dihydro, 3‴*S*-hydroxy:* [1426297-11-1] ***Brainin C***
$C_{31}H_{30}O_{14}$ 626.57
Constit. of the rhizomes of *Brainea insignis*. Antioxidant. Amorph. yellow powder. Mp 215-217°. $[\alpha]_D^{20}$ +33.5 (c, 0.2 in MeOH).

Wang, K. *et al., Chem. Pharm. Bull.*, 2010, **58**, 868-871 (*Brainicin, activity*)
Minghui, Y. *et al., Chin. J. Chem.*, 2012, **30**, 1323-1326 (*Brainins B,C*)

Brandisianin D B-89

[1004319-40-7]



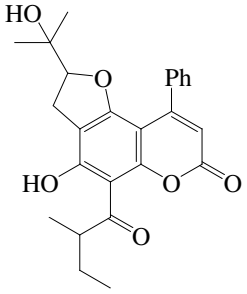
Absolute Configuration

$C_{22}H_{20}O_8$ 412.395
Constit. of the leaves of *Millettia brandisiana*. Exhibits moderate cytotoxicity against HeLa and DLD-1 cell lines. Pale yellow powder. $[\alpha]_D^{23}$-11.1 (c, 0.1 in MeOH). λ_{max} 269 (ϵ 31622.8); 300 (ϵ 10000) (MeOH).

Kikuchi, H. *et al., J. Nat. Prod.*, 2007, **70**, 1910-1914 (*Brandisianin D, struct, activity*)

Brasimarin B B-90

Mammea A/BB cyclo F [342389-82-6]

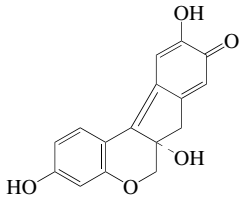


$C_{25}H_{26}O_6$ 422.477
Constit. of *Calophyllum brasiliense* and *Calophyllum dispar*. Shows cytotoxic activity against human nasopharyngeal carcinoma KB cells. Amorph. solid or oil. $[\alpha]_D$+8.1 (c, 0.08 in MeOH). λ_{max} 227 (log ϵ 4.21); 235 (log ϵ 4.19); 299 (log ϵ 4.22); 325 (log ϵ 4.02) (EtOH).

Guilet, D. *et al., J. Nat. Prod.*, 2001, **64**, 563-568 (*Calphyllum dispar constit, struct, cytotoxicity*)
Ito, C. *et al., J. Nat. Prod.*, 2003, **66**, 368-371 (*Brasimarin B, struct*)

Brazilein B-91

6a,7-Dihydro-3,6a,10-trihydroxybenz[b]indeno[1,2-d]pyran-9(6H)-one, 9CI
[600-76-0]

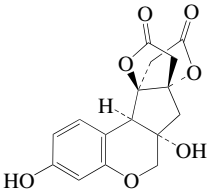


$C_{16}H_{12}O_5$ 284.268
Constit. of *Caesalpinia sappan* and oxidn. prod. of Brazilin, B-93. Inhibits induced NO prodn. in macrophages. Shows a positive inotropic effect through inhibition of $Na^{\oplus}$, $K^{\oplus}$-ATPase. Possesses anticomplementary activity. Shows antiinflammatory activity. Induces contraction of rat arterial smooth muscle. Protective against cerebral ischaemia reperfusion injury. Red-brown cryst. (MeOH aq.). Mp 260-265° (dec.). $[\alpha]_D^{20}$-1012 (c, 0.8 in DMSO). $[\alpha]_D^{20}$-700 (c, 0.10 in MeOH). λ_{max} 276 (log ϵ 3.82); 445 (log ϵ 4.42); 556 (log ϵ 4.81) (DMSO).

Engels, P. *et al., JCS*, 1908, **93**, 1115-1162 (*Brazilein*)
Kim, D.S. *et al., Phytochemistry*, 1997, **46**, 177-178 (*Brazilein, pmr, cmr*)
Oh, S.R. *et al., Planta Med.*, 1998, **64**, 456-458 (*anticomplementary activity*)
De Oliveira, L.F.C. *et al., Vib. Spectrosc.*, 2002, **28**, 243-249 (*ir, Raman*)
Hulme, A.N. *et al., Phytochemistry*, 2005, **66**, 2766-2770 (*ms*)
Sasaki, Y. *et al., Biol. Pharm. Bull.*, 2007, **30**, 193-196 (*NO inhibitor*)
Shen, J. *et al., Eur. J. Pharmacol.*, 2007, **558**, 88-95 (*neuroprotective activity*)
Shen, J. *et al., Eur. J. Pharmacol.*, 2008, **580**, 366-371 (*vasoconstrictive activity*)
Yeu, C.-T. *et al., Bioorg. Med. Chem. Lett.*, 2010, **20**, 1037-1039 (*synth, antiinflammatory activity*)
Wang, X. *et al., Chem. Comm.*, 2013, **49**, 5405-5407 (*synth*)
Li, L.-Q. *et al., Tet. Lett.*, 2013, **54**, 6029-6031 (*synth*)

Brazilide A B-92

[432504-25-1]



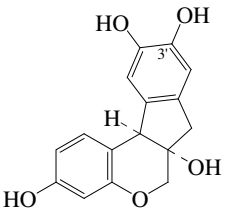
Absolute Configuration

$C_{16}H_{14}O_7$ 318.282
Related to Brazilin, B-93. Probably an oxidation prod. of Brazilein, B-91. Constit. of the heartwood of *Caesalpinia sappan*. Cryst. (Me_2CO). Mp 251-252°. $[\alpha]_D^{20}$+3.3 (c, 3 in Me_2CO). λ_{max} 225 (log ϵ 3.84); 279 (log ϵ 3.38); 284 (log ϵ 3.35) (no solvent reported).

Yang, B.O. *et al., Tet. Lett.*, 2002, **43**, 1731-1733 (*Brazilide A, cryst struct*)
Wang, X. *et al., Chem. Comm.*, 2013, **49**, 5405-5407 (*synth*)
Li, L.-Q. *et al., Tet. Lett.*, 2013, **54**, 6029-6031 (*synth*)

Brazilin B-93

7,11b-Dihydrobenz[b]indeno[1,2-d]pyran-3,6a,9,10(6H)-tetrol, 9CI. *Brasilin. C.I. Natural Red 24*



(+)-*form*

$C_{16}H_{14}O_5$ 286.284
▶ LD_{50} (mus, ipr) 1500 mg/kg. DE3124000

(+)-form [22562-62-5]
Constit. of brazilwood (*Caesalpinia* spp.) and *Haematoxylon brasiletto*. Acid base indicator (pH range: 5.8-7.7; colour change yellow → violet). Melanin synthesis inhibitor. Shows anticomplementary, antiinflammatory, cytoprotective and cytotoxic activity. Gluconeogenesis inhibitor. Shows inhibition of lipopolysaccharide (LPS) inducible NOS prodn., vasorelaxant activity and potentiates glucose transport. White or pale yellow cryst. (EtOH). Sol. EtOH, C_6H_6; spar. sol. Et_2O; mod.sol. H_2O. Mp 250°. $[\alpha]_D^{21.5}$ + 121.5 (c, 1.27 in MeOH). $[\alpha]_D^{20}$ +80 (c, 0.75 in DMSO).

Tetra-Ac: [2241-61-4]
Needles (MeOH). Mp 149-151°. $[\alpha]_D^{21}$ +64.8 (c, 1.08 in $CHCl_3$).

3′-Me ether: [111254-30-9] ***3′-O-Methylbrazilin***
[111407-24-0 (cis-(±)-form)]
$C_{17}H_{16}O_5$ 300.31
Constit. of *Caesalpinia sappan*. $[\alpha]_D^{25}$ + 113.2 (c, 0.21 in MeOH).

Tri-Me ether: [111321-28-9]
Prisms (C_6H_6). Mp 139-140°. $[\alpha]_D^{25}$ + 127.4 (c, 0.51 in $CHCl_3$).

(±)-form [26138-10-3]
[23221-90-1 ((±)-form), 767259-33-6 (unspecified stereochem.)]

Tetra-Ac:
Cryst. (C_6H_6). Mp 164-166°.

Tri-Me ether: [37899-29-9]
Cryst. (C_6H_6). Mp 133-134°.

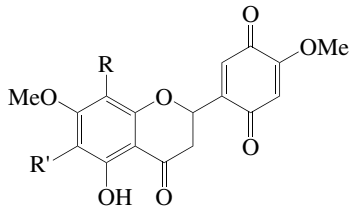
[474-07-7 (unspecified stereochem.), 53295-41-3 (tri-Me ether, unspecified stereochem.)]

Perkin, W.H. *et al., JCS*, 1908, **93**, 489-517 (*Brazilin, struct*)
Robinson, R. *et al., Bull. Soc. Chim. Fr.*, 1958, 125-134 (*Brazilin, synth, rev*)
Dann, O. *et al., Annalen*, 1963, **667**, 116-125 (*(±)-Brazilin, tetra-Ac, synth*)
Craig, J.C. *et al., JOC*, 1965, **30**, 1573-1576 (*Haematoxylon braziletto constit, tetra-Ac, synth, stereochem*)

Morsingh, F. *et al., Tetrahedron*, 1970, **26**, 281-289 (*(±)-Brazilin, synth, resoln*)
Kirkiacharian, B.S. *et al., Bull. Soc. Chim. Fr.*, 1975, 1770-1772 (*(±)-Brazilin, tri-Me ether, synth*)
Fuke, C. *et al., Phytochemistry*, 1985, **24**, 2403-2405 (*Caesalpinia sappan constit, tetra-Ac, synth*)
Saitoh, S. *et al., Chem. Pharm. Bull.*, 1986, **34**, 2506-2511 (*Brazilin, biosynth*)
Namikoshi, M. *et al., Chem. Pharm. Bull.*, 1987, **35**, 2761-2773 (*(+)-Brazilin, 3′-O-*Methylbrazilin, tri-Me ether, struct, abs config)
Davis, F.A. *et al., JOC*, 1993, **58**, 1751-1753 (*(+)-Brazilin tri-Me ether, synth*)
Khil, L.-Y. *et al., Biochem. Pharmacol.*, 1997, **54**, 97-102 (*Brazilin, hypoglycaemic activity*)
Oh, S.R. *et al., Planta Med.*, 1998, **64**, 456-458 (*(+)-Brazilin, anticomplementary activity*)
De Oliveira, L.F.C. *et al., Vib. Spectrosc.*, 2002, **28**, 243-249 (*ir, Raman*)
Hu, C.M. *et al., Eur. J. Pharmacol.*, 2003, **468**, 37-46 (*Brazilin, vasorelaxant activity*)
Won, H.-S. *et al., Planta Med.*, 2004, **70**, 740-744 (*Brazilin, gluconeogenesis inhibitor*)
Kwak, W.-J. *et al., Arzneim.-Forsch.*, 2005, **55**, 541-548 (*(+)-Brazilin tetra-Ac, immunostimulant activity*)
Bae, I.-K. *et al., Eur. J. Pharmacol.*, 2005, **513**, 237-242 (*Brazilin, LPS stimulated iNOS prodn inhibitor*)
Huang, Y. *et al., Org. Lett.*, 2005, **7**, 5841-5844 (*(+)-Brazilin, synth*)
Hulme, A.N. *et al., Phytochemistry*, 2005, **66**, 2766-2770 (*ms*)
Choi, B.-M. *et al., Eur. J. Pharmacol.*, 2008, **580**, 12-18 (*Brazilin, cytoprotective activity*)
Fu, L.-C. *et al., Molecules*, 2008, **13**, 1923-1930 (*Caesalpinia constits*)
Yen, C.-T. *et al., Bioorg. Med. Chem. Lett.*, 2010, **20**, 1037-1039 (*(±)-Brazilin, synth, antiinflammatory activity*)
Lai, W.-C. *et al., J. Nat. Prod.*, 2011, **74**, 1698-1706 (*Brazilin, cytotoxicity*)
Wang, X. *et al., Chem. Comm.*, 2013, **49**, 5405-5407 (*synth*)
Li, L.-Q. *et al., Tet. Lett.*, 2013, **54**, 6029-6031 (*synth*)

Breverin B-94

*2-[3,4-Dihydro-5-hydroxy-7-methoxy-6(or 8)-methyl-4-oxo-2*H*-1-benzopyran-2-yl]-5-methoxy-2,5-cyclohexadiene-1,4-dione, 9CI*



R, R' = H, CH_3

$C_{18}H_{16}O_7$ 344.32

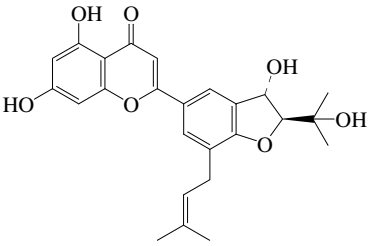
Struct. not fully known.

(-)-*form* [41407-48-1]
Constit. of *Cyperus brevibracteatus*. Mp 186-187°. $[\alpha]_D$-366 ($CHCl_3$).

Allan, R.D. *et al., Tet. Lett.*, 1973, **14**, 7-8 (*Breverin*)

Breviflavone B B-95

[856900-06-6]



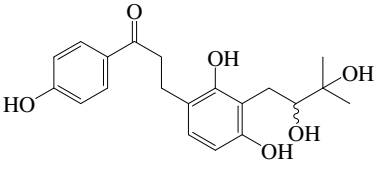
Relative Configuration

$C_{25}H_{26}O_7$ 438.476
Constit. of the leaves of *Epimedium brevicornum*. Inhibits growth of breast cancer cell. Estrogen receptor ligand. Yellow powder. $[\alpha]_D^{27}$-43.6 (c, 0.003 in EtOH).

Yap, S.P. *et al., Planta Med.*, 2005, **71**, 114-119 (*Breviflavone B: struct, cancer growth inhibitor*)
Shen, P. *et al., Phytochemistry*, 2007, **68**, 1448-1458 (*Breviflavone B, occur, estrogen receptor binding activity*)

Brosimacutin I B-96

3-[3-(2,3-Dihydroxy-3-methylbutyl)-2,4-dihydroxyphenyl]-1-(4-hydroxyphenyl)-1-propanone. 3-(2,3-Dihydroxy-3-methylbutyl)-2,4,4′-trihydroxydihydrochalcone [350221-46-4]

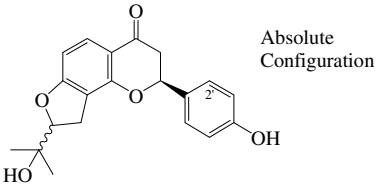


$C_{20}H_{24}O_6$ 360.406
Constit. of the bark of *Brosimum acutifolium*. Amorph. solid. $[\alpha]_D^{22}$-33.1 (c, 0.15 in MeOH). λ_{max} 282 (log ϵ 4.48) (MeOH).

Takashima, J. *et al., J. Nat. Prod.*, 2002, **65**, 1843-1847 (*Brosimacutin I, struct*)

Brosimacutin E B-97

[350221-49-7]



Absolute Configuration

$C_{20}H_{20}O_5$ 340.375
Constit. of *Brosimum acutifolium*. Amorph. solid. $[\alpha]_D^{22}$-84 (c, 0.23 in MeOH). λ_{max} 286 (log ϵ 4.48); 310 (sh) (log ϵ 4.31) (MeOH).

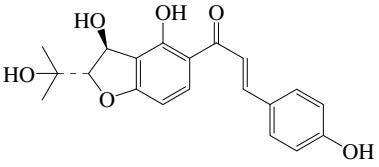
5-Hydroxy: [531503-84-1] *2,3,8,9-Tetrahydro-5-hydroxy-2-(4-hydroxyphenyl)-8-(1-hydroxy-1-methylethyl)-4*H*-furo[2,3-*h*]-1-benzopyran-4-one.* ***Phellodensin D***
$C_{20}H_{20}O_6$ 356.374
Constit. of the leaves of *Phellodendron chinense* var. *glabriusculum* and *Macaranga conifera*. Amorph. yellow powder (MeOH). Mp 88-89°. $[\alpha]_D$ + 35.6 (c, 0.08 in MeOH). $[\alpha]_D^{20}$-99 (c, 0.1 in MeOH). λ_{max} 219 (log ϵ 4.35); 243 (log ϵ 3.93); 294 (log ϵ 4.15); 336 (log ϵ 3.56) (MeOH). λ_{max} 239 (log ϵ 3.94); 298 (log ϵ 4.13); 337 (log ϵ 3.7) (EtOH).

2′-Hydroxy: [376590-18-0] *2-(2,4-Dihydroxyphenyl)-2,3,8,9-tetrahydro-8-(1-hydroxy-1-methylethyl)-4*H*-furo[2,3-*h*]-1-benzopyran-4-one*
$C_{20}H_{20}O_6$ 356.374
Constit. of *Broussonetia papyrifera*. Inhibits human placental microsomal aromatase. Yellow powder. λ_{max} 219 (log ϵ 3.82); 284 (log ϵ 3.38); 297 (log ϵ 3.3); 387 (log ϵ 3.23) (MeOH).

Lee, D. *et al., J. Nat. Prod.*, 2001, **64**, 1286-1293 (*2′-hydroxy, struct, cd, abs config, aromatase inhibitor*)
Takashima, J. *et al., J. Nat. Prod.*, 2002, **65**, 1843-1847 (*Brosimacutin E, struct, cd, abs config*)
Jang, D.S. *et al., Phytochemistry*, 2002, **61**, 867-872 (*Macaranga conifera constit, struct, cd, abs config*)
Wu, T.S. *et al., Heterocycles*, 2003, **60**, 397-404 (*Phellodensin D, struct, cd*)

Brosimacutin G B-98

1-[2,3-Dihydro-3,4-dihydroxy-2-(1-hydroxy-1-methylethyl)-5-benzofuranyl]-3-(4-hydroxyphenyl)-2-propen-1-one [350221-50-0]



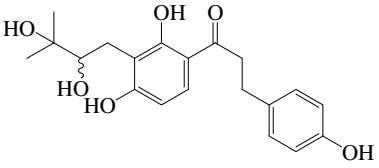
Relative Configuration

$C_{20}H_{20}O_6$ 356.374
Constit. of the bark of *Brosimum acutifolium*. Amorph. yellow solid. Mp 229-231° (synthetic). $[\alpha]_D^{22}$-0.7 (c, 0.06 in MeOH) (natural). $[\alpha]_D^{20}$-12.2 (c, 0.55 in MeOH) (synthetic). λ_{max} 370 (ϵ 26915.3) (MeOH).

Takashima, J. *et al., J. Nat. Prod.*, 2002, **65**, 1843-1847 (*Brosimacutin G, struct*)
Zou, Y. *et al., JOC*, 2005, **70**, 1761-1770 (*synth*)

Brosimacutin H B-99

1-[3-(2,3-Dihydroxy-3-methylbutyl)-2,4-dihydroxyphenyl]-3-(4-hydroxyphenyl)-1-propanone. 3′-(2,3-Dihydroxy-3-methylbutyl)-2′,4,4′-trihydroxydihydrochalcone [350221-45-3]

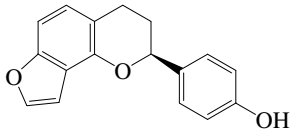


$C_{20}H_{24}O_6$ 360.406
Constit. of the bark of *Brosimum acutifolium*. Amorph. solid. $[\alpha]_D^{22}+7$ (c, 1.1 in MeOH). λ_{max} 283 (log ϵ 4.47); 310 (sh) (log ϵ 4.11) (MeOH).

Takashima, J. *et al., J. Nat. Prod.*, 2002, **65**, 1843-1847 (*Brosimacutin H, struct*)

Brosimacutin J B-100

*4-(3,4-Dihydro-2*H*-furo[2,3-*h*]-1-benzopyran-2-yl)phenol. 4′-Hydroxyfurano[7,8:2″,3″]flavan*

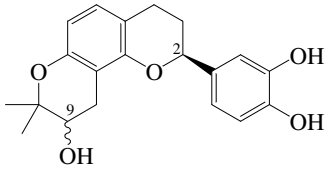


$C_{17}H_{14}O_3$ 266.296

(*S*)-*form* [874204-62-3]
Constit. of the bark of *Brosimum acutifolium*. Amorph. solid. $[\alpha]_D^{22}$-23.8 (c, 0.08 in MeOH). λ_{max} 216 (log ϵ 4); 249 (log ϵ 3.65); 256 (log ϵ 3.67); 283 (log ϵ 3.24); 293 (log ϵ 3.11) (MeOH).

Takashima, J. *et al., Planta Med.*, 2005, **71**, 654-658 (*isol, cd, pmr, cmr*)

Brosimacutin K B-101



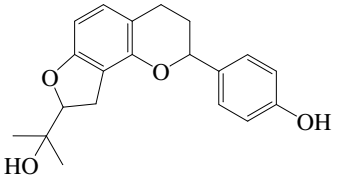
$C_{20}H_{22}O_5$ 342.391

(2*S*,9ξ)-*form* [874205-55-7]
Constit. of the bark of *Brosimum acutifolium*. Cytotoxic to mouse leukaemia P388/VCR and P388/S cells. Amorph. solid. $[\alpha]_D^{22}$-252.5 (c, 0.12 in MeOH). λ_{max} 211 (log ϵ 4.7); 283 (log ϵ 3.93) (MeOH).

Takashima, J. *et al., Planta Med.*, 2005, **71**, 654-658 (*Brosimacutin K, cd, struct, activity*)

Brosimine A B-102

[280761-01-5]

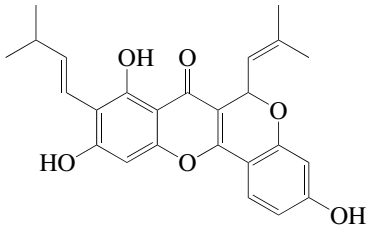


$C_{20}H_{22}O_4$ 326.391
Constit. of the trunk bark of *Brosimum acutifolium*. $[\alpha]_D^{25}$-7.1 (c, 0.35 in $CHCl_3$).

Torres, S.L. *et al., Phytochemistry*, 2000, **53**, 1047-1050 (*Brosimine A, struct*)

Brosimone I B-103

[123064-86-8]

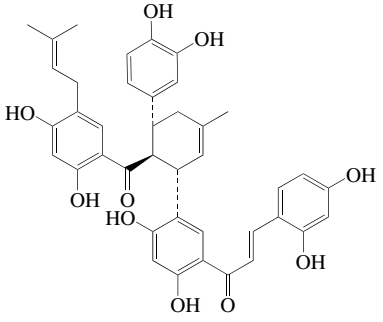


$C_{25}H_{24}O_6$ 420.461
Constit. of the roots of *Brosimopsis oblongifolia* (preferred genus name *Brosimum*), stem of *Artocarpus hypagyreus* and *Artocarpus heterophyllus*. Shows antibacterial and antifungal activities. Breast cancer resistant protein inhibitor and overcomes the anticancer drug resistance of cancer cells. Inhibitor of pancreatic lipase. Cytotoxic to mouse B16 melanoma cells. Amorph. powder. $[\alpha]_D^{20}+88$ (c, 1 in Me_2CO). λ_{max} 258 (ϵ 17000); 291 (ϵ 17400); 369 (ϵ 16900) (MeOH) (Berdy).

Ferrari, F. *et al., Planta Med.*, 1989, **55**, 70-72 (*Brosimone I, struct*)
Eur. Pat., 2005, 159 112 (*Artocarpus heterophyllus constit, activity*)
Zhao, T. *et al., Chem. Biodiversity*, 2009, **6**, 2209-2216 (*activity*)
Arung, E.T. *et al., Fitoterapia*, 2010, **81**, 120-123 (*Artocarpus heterophyllus constit, activity*)
Yu, M.-H. *et al., Chem. Biodiversity*, 2012, **9**, 394-402 (*Artocarpus hypargyreus constit*)

Brosimone B B-104

[123914-51-2]

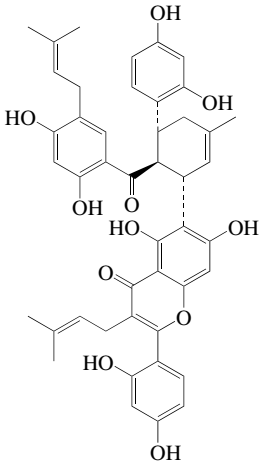


$C_{40}H_{38}O_{10}$ 678.734
Constit. of *Brosimopsis oblongifolia* (preferred genus name *Brosimum*). Amorph. powder. $[\alpha]_D$-447 (c, 0.1 in MeOH).

Messana, I. *et al., Heterocycles*, 1989, **29**, 683-690 (*Brosimone B*)
Tsopmo, A. *et al., J. Nat. Prod.*, 1999, **62**, 1432-1434 (*pmr*)
Qi, C. *et al., Angew. Chem., Int. Ed.*, 2013, **52**, 8345-8348 (*synth*)

Brosimone D B-105

[123914-50-1]

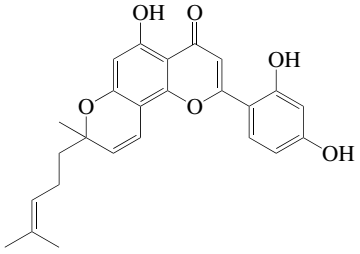


$C_{45}H_{44}O_{11}$ 760.836
Constit. of *Brosimopsis oblongifolia* (preferred genus name *Brosimum*). Amorph. powder. $[\alpha]_D$-204 (c, 0.3 in MeOH).

Messana, I. *et al., Heterocycles*, 1989, **29**, 683-690 (*Brosimone D, struct*)

Brosimone G B-106

*2-(2,4-Dihydroxyphenyl)-5-hydroxy-8-methyl-8-(4-methyl-3-pentenyl)-4*H,*8*H-*benzo[1,2-*b*:3,4-*b*′]dipyran-4-one, 9CI*
[123064-84-6]



$C_{25}H_{24}O_6$ 420.461
Constit. of the roots of *Brosimopsis oblongifolia* (preferred genus name *Brosimum*). Amorph. λ_{max} 232 (ϵ 21800); 252 (ϵ 17900); 276 (ϵ 20900); 341 (ϵ 13500) (MeOH) (Berdy).

2,3-Dihydro: [329319-20-2] ***Sanggenol L***
$C_{25}H_{26}O_6$ 422.477
Constit. of *Morus mongolica*. Shows cytotox. activity against human oral tumour cell lines HSC-2 and HSG. Pale yellow solid. $[\alpha]_D$-18 (c, 0.1 in MeOH). Obt. as a mixt. of C-8 epimers. λ_{max} 203 (log ϵ 4.37); 228 (log ϵ 3.94); 272 (log ϵ 4.31); 359 (log ϵ 3.16) (EtOH).

2′-Deoxy, 2,3-dihydro: [432041-07-1] ***Arcommunol A***. *Cycloaltilisin 7* [1286238-71-8 (Arcommunol A)]

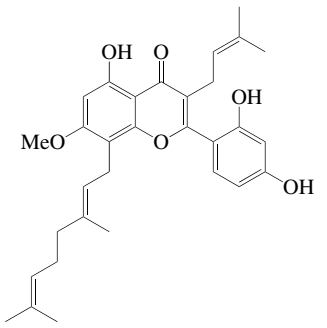
$C_{25}H_{26}O_5$ 406.477
Constit. of the fruit of *Artocarpus communis*. Cathepsin K inhibitor. Pale yellow solid or orange-yellow gum. $[\alpha]_D$-23.1 (c, 0.19 in MeOH) (Cycloaltilisin 7). $[\alpha]_D$-16.4 (c, 0.1 in $CHCl_3$) (Arcommunol A). (2*S*,8*R*)-Config. assigned for Arcommunol A. Unspecified stereochem. given for Cycloaltilisin 7. λ_{max} 213 (log ϵ 3.13); 227 (log ϵ 3.3); 272 (log ϵ 3.12); 296 (log ϵ 3.69); 360 (log ϵ 3.42) (MeOH).

2′,5-Dideoxy, 2,3-dihydro: [1286238-72-9]
Arcommunol B
$C_{25}H_{26}O_4$ 390.478
Constit. of the fruit of *Artocarpus communis*. Orange-yellow gum. $[\alpha]_D$-8.2 (c, 0.08 in $CHCl_3$). (2*S*,8*R*)-Config. assigned. λ_{max} 280 (log ϵ 4.56); 328 (log ϵ 4.17) (MeOH). λ_{max} 248 (sh); 345 (MeOH/NaOH).

Ferrari, F. *et al., Planta Med.*, 1989, **55**, 70-72 (*Brosimone G, struct*)
Shi, Y.-Q. *et al., J. Nat. Prod.*, 2001, **64**, 181-188 (*Sanggenol L, struct, cytotox*)
Patil, A.D. *et al., J. Nat. Prod.*, 2002, **65**, 624-627 (*Cycloaltilisin 7, struct, cathepsin K inhibitor*)
Hsu, C.-L. *et al., Food Chem.*, 2011, **127**, 127-134 (*Arcommunols A,B*)

Brosimone H B-107

8-Geranyl-2′,4′,5-trihydroxy-7-methoxy-6-prenylflavone [123064-85-7]

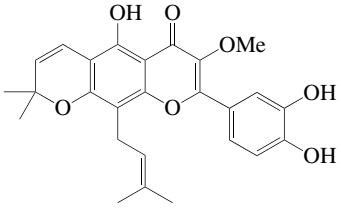


$C_{31}H_{36}O_6$ 504.622
Constit. of roots of *Brosimopsis oblongifolia* (preferred genus name *Brosimum*). Amorph. λ_{max} 263 (ϵ 24000); 295 (ϵ 9550); 334 (ϵ 9500) (MeOH) (Berdy).

Ferrari, F. *et al., Planta Med.*, 1989, **55**, 70-72 (*Brosimone H*)

Broussoflavonol A B-108

*8-(3,4-Dihydroxyphenyl)-5-hydroxy-7-methoxy-2,2-dimethyl-10-(3-methyl-2-butenyl)-2*H,*6*H-*benzo[1,2-*b*:*5,4-*b′]dipyran-6-one,* CCI [99217-69-3]

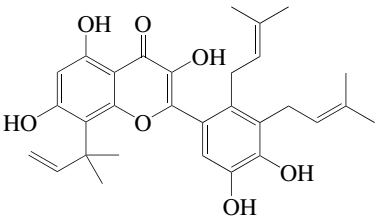


$C_{26}H_{26}O_7$ 450.487
Constit. of *Broussonetia papyrifera*. Amorph. powder. λ_{max} 295 (ϵ 22909); 360 (ϵ 15136) (EtOH).

Matsumoto, J. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3250-3256 (*Broussoflavonol A*)

Broussoflavonol C B-109

[104494-29-3]

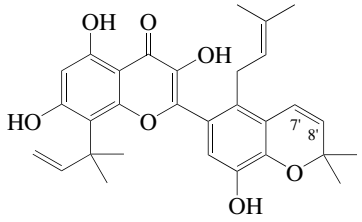


$C_{30}H_{34}O_7$ 506.594
Struct. revised in 1989. Constit. of root bark of *Broussonetia papyrifera*. Pale-yellow prisms (C_6H_6/Me_2CO). Mp 173-176°.

Fukai, T. *et al., Heterocycles*, 1989, **29**, 2379-2390 (*Broussoflavonol C, struct*)

Broussoflavonol D B-110

[104494-30-6]



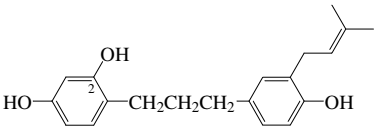
$C_{30}H_{32}O_7$ 504.579
Struct. revised in 1989. Constit. of root bark of *Broussonetia papyrifera*. Pale yellow prisms (Me_2CO/hexane). Mp 102-110°. λ_{max} 206 (ϵ 60256); 263 (ϵ 22387); 350 (ϵ 7943) (EtOH).

7′,8′-Dihydro: ***Broussoflavonol E***†
$C_{30}H_{34}O_7$ 506.594
Constit. of *Broussonetia* spp. Pale yellow prisms (C_6H_6). Mp 168-170°. The original struct. assigned to Broussoflavonol E (1986) was revised (1989).

Fukai, T. *et al., Chem. Pharm. Bull.*, 1986, **34**, 1987-1993 (*Broussoflavonols D,E*)
Fukai, T. *et al., Heterocycles*, 1989, **29**, 2379-2390 (*Broussoflavonol D, Broussoflavonol E, revised struct*)
Fang, S.-C. *et al., Phytochemistry*, 1995, **38**, 535-538 (*Broussoflavonol E, revised struct*)

Broussonin C B-111

4-[3-[4-Hydroxy-3-(3-methyl-2-butenyl)-phenyl]propyl]-1,3-benzenediol, CAS. *1-(2,4-Dihydroxyphenyl)-3-(4-hydroxy-3-prenylphenyl)propane* [76045-49-3]



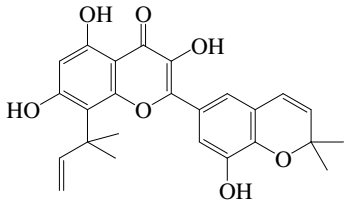
$C_{20}H_{24}O_3$ 312.408
Isol. from *Broussonetia papyrifera* infected with *Fusarium solani*. Phytoalexin showing antifungal activity. Oil. λ_{max} 225 (ϵ 15500); 281 (ϵ 5600) (EtOH) (Berdy).

2-Me ether: [376362-03-7] *1-(4-Hydroxy-2-methoxyphenyl)-3-(4-hydroxy-3-prenylphenyl)propane*
$C_{21}H_{26}O_3$ 326.435
Constit. of *Broussonetia papyrifera*. Exhibits aromatase inhibition props. for chemoprevention and treatment of cancer. Brown powder. Mp 85-86°. λ_{max} 228 (log ϵ 3.97); 281 (log ϵ 3.59) (MeOH).

Takasugi, M. *et al., Chem. Lett.*, 1984, **13**, 689-692 (*Broussonin C*)
Lee, D. *et al., J. Nat. Prod.*, 2001, **64**, 1286-1293 (*2-Me ether*)
Pat. Coop. Treaty (WIPO), 2003, 03 013 554 (*2-Me ether, activity*)

Broussonol A B-112

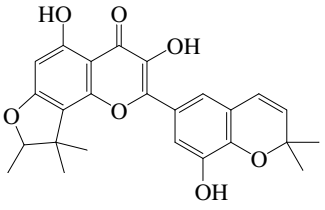
*8-(1,1-Dimethyl-2-propenyl)-3,5,7-trihydroxy-2-(8-hydroxy-2,2-dimethyl-2*H*-1-benzopyran-6-yl)-4*H*-1-benzopyran-4-one,* CAS [339524-98-0]



$C_{25}H_{24}O_7$ 436.46
Constit. of the leaves of *Broussonetia kazinoki*. Exhibits weak cytotoxicity against A549 and HCT-8 human tumour cell lines. Yellow powder. Mp 162-164°. λ_{max} 209 (log ϵ 4.58); 250 (log ϵ 4.47); 266 (log ϵ 4.46); 376 (log ϵ 4.31) (MeOH).

Zhang, P.C. *et al., Chin. Chem. Lett.*, 2001, **12**, 141-142
Zhang, P.C. *et al., J. Nat. Prod.*, 2001, **64**, 1206-1209 (*Broussonol A, struct, activity*)

Broussonol B B-113

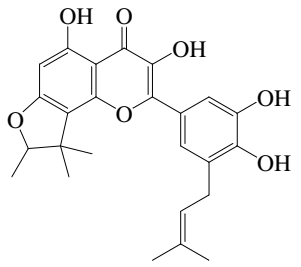


$C_{25}H_{24}O_7$ 436.46

(ξ)-*form* [370563-80-7]
Constit. of *Broussonetia kazinoki*. Exhibits weak cytotoxicity agianst A549 and HCT-8 human tumour cell lines. Yellow powder. Mp 210-212°. λ_{max} 207 (log ϵ 4.55); 250 (log ϵ 4.6); 266 (log ϵ 4.58); 381 (log ϵ 4.37) (MeOH).

Zhang, P.-C. *et al., J. Nat. Prod.*, 2001, **64**, 1206-1209 (*Broussonol B, struct, activity*)

Broussonol C B-114



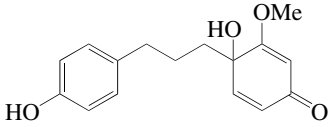
$C_{25}H_{26}O_7$ 438.476

(ξ)-*form* [370563-86-3]
Constit. of *Broussonetia kazinoki*. Exhibits weak cytotoxicity against A549 and HCT-8 human tumour cell lines. Yellow powder. Mp 174-176°. λ_{max} 209 (log ϵ 4.61); 259 (log ϵ 4.3); 382 (log ϵ 4.19) (MeOH).

Zhang, P.-C. *et al., J. Nat. Prod.*, 2001, **64**, 1206-1209 (*Broussonol C, struct, activity*)

Broussonone A B-115

4-Hydroxy-4-[3-(4-hydroxyphenyl)propyl]-3-methoxy-2,5-cyclohexadien-1-one [1372551-34-2]

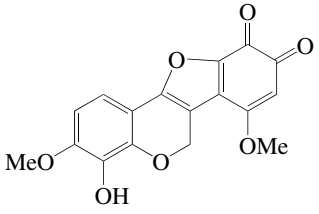


$C_{16}H_{18}O_4$ 274.316
Constit. of the stem bark of *Broussonetia kanzinoki*. Pancreatic lipase inhibitor. Pale yellow gum. $[\alpha]_D^{25}$-74.6 (c, 0.18 in MeOH). λ_{max} 280 (log ϵ 3.72) (MeOH).

Ahn, J. *et al., Bioorg. Med. Chem. Lett.*, 2012, **22**, 2760-2763 (*Broussonone A*)

Bryaquinone B-116

*4-Hydroxy-3,7-dimethoxy-6*H*-benzofuro[3,2-*c*][1]benzopyran-9,10-dione, CAS. 4-Hydroxy-3,7-dimethoxypterocarpene-9,10-quinone* [57684-35-2]



$C_{17}H_{12}O_7$ 328.278
The struct. shown was proposed but is not established. Constit. of *Brya ebenus*. Purple-brown solid. Mp 350°.

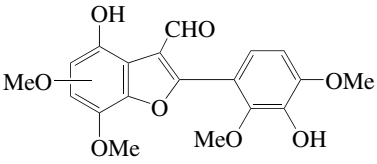
Ac:
Red needles ($CHCl_3$/petrol). Mp 258-260°.

Deoxy: [58536-20-2] ***Deoxybryaquinone***
$C_{17}H_{12}O_6$ 312.278
From *Brya ebenus*. Purple cryst. ($CHCl_3$/petrol). Sublimes at >200°.

Ferreira, M.A. *et al., JCS Perkin 1*, 1975, 1113-1115 (*Brya ebenus constits*)
Antus, S. *et al., JCS Perkin 1*, 1982, 1389-1394 (*synth*)
Kolonits, P. *et al., Acta Chim. Hung.*, 1983, **113**, 367-373 (*synth*)

Bryebinal B-117

4-Hydroxy-2-(3-hydroxy-2,4-dimethoxyphenyl)-5,7(or 6,7)-dimethoxy-3-benzofurancarboxaldehyde, 9CI [57702-02-0]

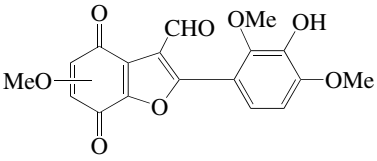


$C_{19}H_{18}O_8$ 374.346
Constit. of *Brya ebenus*. Yellow needles (Et_2O/C_6H_6). Mp 182-183°. λ_{max} 223 (log ϵ 4.33); 268 (log ϵ 4.21); 288 (log ϵ 4.18); 348 (log ϵ 3.85) (EtOH).

Ferreira, M.A. *et al., JCS Perkin 1*, 1975, 1113-1115 (*Bryebinal, struct*)

Bryebinalquinone B-118

4,7-Dihydro-2-(3-hydroxy-2,4-dimethoxyphenyl)-5(or 6)-methoxy-4,7-dioxo-3-benzofurancarboxaldehyde, 9CI [57702-03-1]

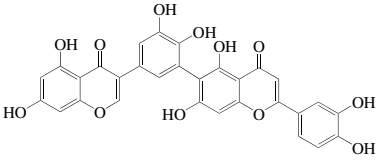


$C_{18}H_{14}O_8$ 358.304
Constit. of *Brya ebenus*. Orange needles. Mp 235-237° (subl. at 220°).

Ferreira, M.A. *et al., JCS Perkin 1*, 1975, 1113-1115 (*Bryebinalquinone, struct*)

Bryoflavone B-119

4′,5,5′,7-Tetrahydroxyisoflavone-(3′→6)-3′,4′,5,7-tetrahydroxyflavone [111200-22-7]

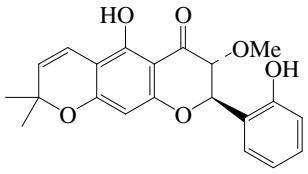


$C_{30}H_{18}O_{12}$ 570.465
Constit. of *Bryum capillare*. Yellow cryst. Mp 250-252° dec.

Geiger, H. *et al., Z. Naturforsch., C*, 1987, **42**, 863-867 (*Bryoflavone*)
Roth, L. *et al., Roth Collection of Natural Product Data*, VCH, Weinheim, 1995,

Buceracidin A B-120

*7,8-Dihydro-5-hydroxy-8-(2-hydroxyphenyl)-7-methoxy-2,2-dimethyl-2*H*,6*H*-benzo[1,2-*b*:5,4-*b*′]dipyran-6-one* [485831-90-1]

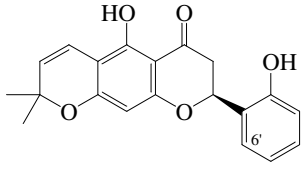


$C_{21}H_{20}O_6$ 368.385
Constit. of the twigs of *Bucida buceras*. Pale yellow solid. Mp > 200°. $[\alpha]_D$+29.7 (c 0.6 in $CHCl_3$). λ_{max} 277 (log ϵ 4.51); 300 (log ϵ 4.02); 313 (log ϵ 4.05) (MeOH).

Hayashi, K. *et al., J. Nat. Prod.*, 2003, **66**, 125-127 (*Buceracidin A, struct*)

Buceracidin B B-121

*7,8-Dihydro-5-hydroxy-8-(2-hydroxyphenyl)-2,2-dimethyl-2*H*,6*H*-benzo[1,2-*b*:5,4-*b*′]dipyran-6-one* [485831-91-2]

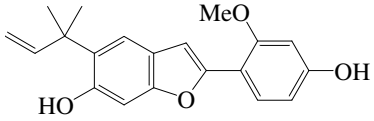


$C_{20}H_{18}O_5$ 338.359
Constit. of the twigs of *Bucida buceras*. Pale yellow solid. Mp 142-143°. $[\alpha]_D$-25.1 (c, 0.65 in $CHCl_3$). λ_{max} 276 (log ϵ 4.58); 298 (log ϵ 4.07); 310 (log ϵ 4.01) (MeOH).

6′-Hydroxy: [889446-22-4] ***Villosin A***
$C_{20}H_{18}O_6$ 354.359
Constit. of *Patrinia villosa*. Light yellow powder. Mp 167-168°. $[\alpha]_D^{25}$-100 (c, 1 in MeOH). λ_{max} 275; 310 (MeOH).

Hayashi, K. *et al., J. Nat. Prod.*, 2003, **66**, 125-127 (*Buceracidin B, struct*)
Peng, J.Y. *et al., Chin. Chem. Lett.*, 2006, **17**, 485-488 (*Villosin A, struct, abs config*)

Burttinol D B-122

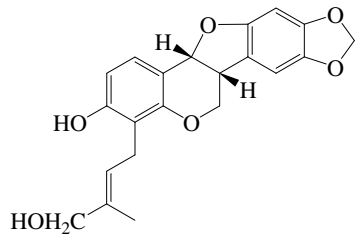


$C_{20}H_{20}O_4$ 324.376
Constit. of the root bark of *Erythrina burttii*. Oil. λ_{max} 231; 285; 326; 341 (MeOH).

Yenesew, A. *et al., Phytochemistry*, 2002, **59**, 337-341 (*Burttinol D, struct*)

Cabenegrin A I C-1

[84297-59-6]



Absolute Configuration

$C_{21}H_{20}O_6$ 368.385

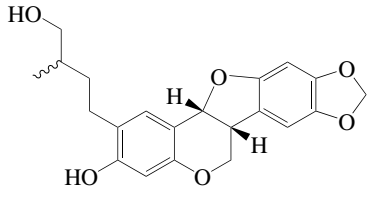
Constit. of unidentified South American plant "Cabeca de Negra". Cytotoxic to human Leukaemia HL-60, colon cancer HCT-8 and melanoma MDA-MB-435 cell lines. Antidote against snake venom (*Bothrops arox*), tested in mice and dogs. Cryst. Mp 167-168°. $[\alpha]_D^{24}$-127 (c, 0.1 in $CHCl_3$). cd 238 nm (Δε-9.87). λ_{max} 209 (ε 75000); 309 (ε 13000) (EtOH).

4′-Deoxy: [90744-42-6] *4′-Deoxycabenegrin A I.* ***Harpalicin***
$C_{21}H_{20}O_5$ 352.386
Constit. of *Harpalyce brasiliana*. $[\alpha]_D$-95.3 (c, 3.4 in $CHCl_3$).

Nakagawa, K. *et al., Tet. Lett.*, 1982, **23**, 3855-3858 (*Cabenegrin A I, struct, activity*)
Ishiguro, M. *et al., Tet. Lett.*, 1982, **23**, 3859-3862 (*synth*)
Barua, P. *et al., Chem. Ind. (London)*, 1984, 303-305 (*synth*)
Da Silva, G.L. *et al., Phytochemistry*, 1997, **46**, 1059-1062 (*Harpalicin*)
Tokes, A.L. *et al., Tetrahedron*, 1999, **55**, 9283-9296 (*synth, cd, abs config*)
Simas, A.B.C. *et al., Tet. Lett.*, 2001, **42**, 4111-4113 (*Harpalicin, synth*)
Antus, S. *et al., Pure Appl. Chem.*, 2004, **76**, 1025-1032 (*synth*)
Militao, G.C.G. *et al., Bioorg. Med. Chem.*, 2007, **15**, 6687-6691 (*Cabenegrin A I, activity*)

Cabenegrin A II C-2

[84297-60-9]



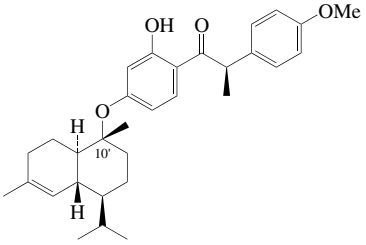
Absolute Configuration

$C_{21}H_{22}O_6$ 370.401

Constit. of unidentified South American plant "Cabeca de Negra" and of *Harpalyce brasiliana*. Potent antidote against snake venoms. Cytotoxicity to human Leukaemia HL-60, colon cancer HCT-8 and melanoma MDA-MB-435 cells. cd 237 nm (Δε-6.68). λ_{max} 204 (ε 116000); 308 (ε 11800) (MeOH).

Nakagawa, K. *et al., Tet. Lett.*, 1982, **23**, 3855-3858 (*Cabenegrin A II, struct, activity*)
Ishiguro, M. *et al., Tet. Lett.*, 1982, **23**, 3859-3862 (*synth*)
Militao, G.C.G. *et al., Bioorg. Med. Chem.*, 2007, **15**, 6687-6691 (*Harpalyce brasiliana constit, activity*)

4-*O*-Cadinylangolensin C-3



(10′*R*)-*form*

$C_{31}H_{40}O_4$ 476.655

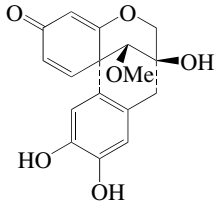
(10′*R*)-*form* [75917-91-8]
4-O-*α*-*Cadinylangolensin*.
Constit. of *Pterocarpus angolensis* heartwood. Needles (EtOH). Mp 136°.

(10′*S*)-*form* [75872-84-3]
4-O-*τ*-*Cadinylangolensin*.
Constit. of *Pterocarpus angolensis* heartwood. Noncryst. Mp 44-46°.

Bezuidenhoudt, B.C.B. *et al., JCS Perkin 1*, 1980, 2179-2183 (*Pterocarpus angolensis constits, cryst struct, cd*)

Caesalpin J C-4

[99217-67-1]



Absolute Configuration

$C_{17}H_{16}O_6$ 316.31

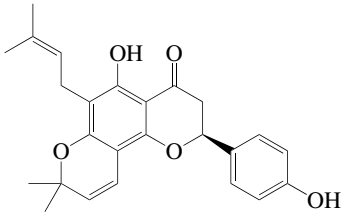
Homoisoflavan. Constit. of *Caesalpinia sappan* (Sappan Lignum). Needles. Mp 242-243° dec. $[\alpha]_D$+445 (MeOH).

Tri-Ac: [109304-78-1]
$C_{23}H_{22}O_9$ 442.421
Prisms. Mp 216-218°.

Shimokawa, T. *et al., Chem. Pharm. Bull.*, 1985, **33**, 3545-3547 (*Caesalpin J, struct*)
Miyahara, K. *et al., Chem. Pharm. Bull.*, 1986, **34**, 4166-4169 (*tri-Ac, cryst struct, abs config*)

Cajaflavanone C-5

Erythrisenegalone



$C_{25}H_{26}O_5$ 406.477

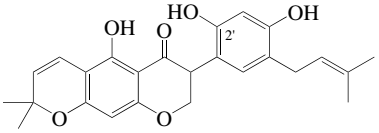
(*S*)-*form* [68236-12-4]
Constit. of *Cajanus cajan*, *Erythrina senegalensis*, *Erythrina fusca*, *Maclura pomifera*, *Lespedeza floribunda* and *Citrus medica*. Mod. potent inhibitor of melanin synth. Mod. cytotox. against a range of tumour cell lines. Straw-coloured cryst. Mp 129-130° (122-124°). $[\alpha]_D$-66.6 (c, 1 in $CHCl_3$). $[\alpha]_D$-5 (c, 1 in $CHCl_3$).

(±)-*form* [68682-03-1]
Light yellow cryst. (C_6H_6/petrol). Mp 138-140°.

Bhanumati, S. *et al., Phytochemistry*, 1978, **17**, 2045 (*Cajaflavanone, struct*)
Nagar, A. *et al., Tet. Lett.*, 1978, 2031-2034 (*(+/-)-form, synth*)
Jain, A.C. *et al., Tetrahedron*, 1978, **34**, 3563-3567 (*(+/-)-form, synth*)
Fomum, Z.T. *et al., Phytochemistry*, 1985, **24**, 3075-3076 (*Erythrisenegalone, struct*)
Monache, G.D. *et al., Phytochemistry*, 1995, **39**, 575-580 (*Maclura pomifera*)
Chan, Y.-Y. *et al., Heterocycles*, 2009, **78**, 1309-1316 (*Citrus medica constit, cytotox*)
Mori-Hongo, M. *et al., J. Nat. Prod.*, 2009, **72**, 194-203 (*Lespedeza floribunda constit, melanin synth inhibitor*)

Cajanone C-6

*7-[2,4-Dihydroxy-5-(3-methyl-2-butenyl)phenyl]-7,8-dihydro-5-hydroxy-2,2-dimethyl-2*H,*6*H-*benzo[1,2*-b:*5,4*-b′*]dipyran-6-one, 9CI. NSC 294409* [63006-48-4]



$C_{25}H_{26}O_6$ 422.477

Constit. of *Cajanus cajan* and *Sophora tetraptera*. Antiseptic. Shows antifungal activity. Pale yellow oil. $[\alpha]_D^{25}$+3.9 (c, 0.1 in MeOH). Log P 4.93 (uncertain value) (calc). λ_{max} 225 (sh) (log ε 4.11); 273 (log ε 4.3); 293 (log ε 4.05) (EtOH).

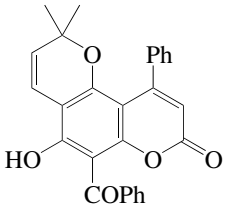
2′-Me ether: [71765-79-2] ***2′-O-Methylcajanone***
$C_{26}H_{28}O_6$ 436.504
Isol. from root bark of *Cajanus cajan*. Yellow cryst. solid (EtOAc/petrol). Mp 85°. Opt. inactive.

6′-Methoxy, 2′-deoxy:
$C_{26}H_{28}O_6$ 436.504
Constit. of the roots of *Campylotropis hirtella*. Yellow oil. $[\alpha]_D^{25}$+37.6 (c, 1.2 in MeOH). Possesses (3*R*)-config. λ_{max} 227; 272; 298 (MeOH).

Preston, N.W. *et al., Phytochemistry*, 1977, **16**, 143-144 (*Cajanone, struct, antifungal activity*)
Bhanumati, S. *et al., Phytochemistry*, 1979, **18**, 693 (*2′-O-Methylcajanone, struct*)
Iinuma, M. *et al., Phytochemistry*, 1995, **39**, 667-672 (*Sophora tetraptera constit*)
Shou, Q.-Y. *et al., Planta Med.*, 2010, **76**, 803-808 (*Campylotropis constit*)

Calanone C-7

*6-Benzoyl-5-hydroxy-2,2-dimethyl-10-phenyl-2*H,*8*H-*benzo[1,2-*b:*3,4-*b']*dipyran-8-one, 9CI* [158081-95-9]



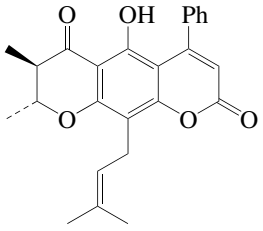
$C_{27}H_{20}O_5$ 424.452
Constit. of *Calophyllum teysmannii*. Shows cytotoxic activity. Pale yellow glass.

3,4-Dihydro, 3α,4β-dihydroxy:
$C_{27}H_{22}O_7$ 458.467
Constit. of *Calophyllum teysmannii*. Pale yellow powder. $[\alpha]_D^{25}$-31.2 (c, 0.2 in $CHCl_3$). λ_{max} 252; 324 (EtOH).

Gustafson, K.R. *et al., Tet. Lett.*, 1994, **35**, 5821 (*isol, uv, ir, pmr, cmr*)
Cao, S.-G. *et al., Helv. Chim. Acta*, 1998, **81**, 1404-1416 (*deriv, pmr, cmr, activity, synth*)

Calaustralin C-8

*7,8-Dihydro-5-hydroxy-7,8-dimethyl-10-(3-methyl-2-butenyl)-4-phenyl-2*H,*6*H-*benzo[1,2-*b:*5,4-*b']*dipyran-2,6-dione, CAS* [21824-07-7]



Relative Configuration

$C_{25}H_{24}O_5$ 404.462
Found in seed oil of *Calophyllum inophyllum* and bark of *Calophyllum australianum*. Shows antibacterial activity against *Staphylococcus aureus*. Cryst. (CH_2Cl_2/hexane). Mp 193-195° (197-198°).

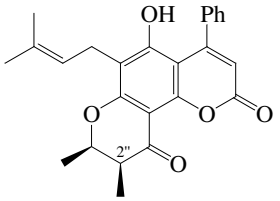
Me ether: [213834-42-5] **O-*Methylcalaustralin***
$C_{26}H_{26}O_5$ 418.488
Constit. of *Calophyllum teysmannii*. Oil. $[\alpha]_D^{25}$-18 (c, 0.04 in $CHCl_3$). λ_{max} 232; 268; 324; 346 (sh) (EtOH).

7-or 8-Epimer, Me ether: [213834-36-7] **O-*Methylisocalaustralin***
$C_{26}H_{26}O_5$ 418.488
Constit. of *Calophyllum teysmannii*. Oil. $[\alpha]_D^{25}$-10.8 (c, 0.02 in $CHCl_3$). Possesses *cis*-config. λ_{max} 232; 272; 324 (EtOH).

Breck, G.D. *et al., JOC*, 1969, **34**, 4203-4204 (*Calophyllum australianum constit, struct*)
Bhushan, B. *et al., Indian J. Chem.*, 1975, **13**, 746-747 (*Calaustralin, struct*)
Cao, S.-G. *et al., Helv. Chim. Acta*, 1998, **81**, 1404-1416 (*Calophyllum teysmannii constits, struct*)
Ishikawa, T. *et al., Heterocycles*, 2000, **53**, 453-474 (*rev*)
Yimdjo, M.C. *et al., Phytochemistry*, 2004, **65**, 2789-2795 (*isol, pmr, cmr, antibacterial activity*)

Calocoumarin A C-9

[366477-64-7]

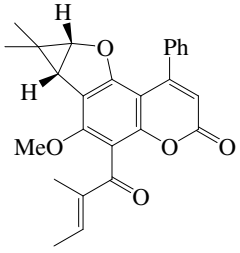


$C_{25}H_{24}O_5$ 404.462
Constit. of *Calophyllum brasiliense* and *Calophyllum inophyllum*. Antitumour agent.

2″-Epimer: ***Brasimarin C***
$C_{25}H_{24}O_5$ 404.462
Constit. of the stem bark of *Calophyllum brasiliense*. Cytotoxic. Oil. $[\alpha]_D$ + 8.9 (c, 0.13 in MeOH). λ_{max} 228 (log ε 4.38); 286 (log ε 4.15); 324 (log ε 4.13) (MeOH).

Itoigawa, M. *et al., Cancer Lett.*, 2001, **169**, 15-19 (*Calocoumarin A, activity*)
Ito, C. *et al., J. Nat. Prod.*, 2003, **66**, 368-371 (*Brasimarin C*)

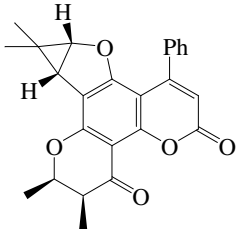
Calocoumarin B C-10



$C_{26}H_{24}O_5$ 416.473
Constit. of *Calophyllum inophyllum*. Antitumour agent.

Itoigawa, M. *et al., Cancer Lett.*, 2001, **169**, 15-19 (*isol, activity*)

Calocoumarin C C-11

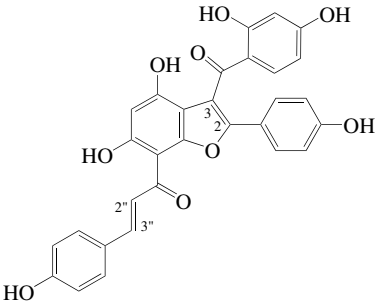


$C_{25}H_{22}O_5$ 402.446
Constit. of *Calophyllum inophyllum*. Antitumour agent.

Itoigawa, M. *et al., Cancer Lett.*, 2001, **169**, 15-19 (*isol, activity*)

Calodenin B C-12

1-[3-(2,4-Dihydroxybenzoyl)-4,6-dihydroxy-2-(4-hydroxyphenyl)-7-benzofuranyl]-3-(4-hydroxyphenyl)-2-propen-1-one, 9CI. 3-(2,4-Dihydroxybenzoyl)-4,6-dihydroxy-7-(4-hydroxycinnamoyl)-2-(4-hydroxyphenyl)benzofuran [88901-97-7]



$C_{30}H_{20}O_9$ 524.483
Constit. of the bark of *Brackenridgea zanguebarica*, *Ochna calodendron*, *Ochna macrocalyx*, *Cordia goetzei* and *Ouratea turnarea*. Cytotoxic to MCF-7 breast cancer lines and exhibits antibacterial props. against *Staphylococcus aureus*. Orange-red rosettes (Me_2CO/petrol). Mp 252-253°. Obt. in 1988, was inadvertently ascribed to *Cordia goetzei* instead of *B. zanguebarica*.

*2,3-Dihydro(*trans-*):* [88901-98-8] *2,3-Dihydrocalodenin B.* ***Afzelone C***
$C_{30}H_{22}O_9$ 526.498
Constit. of *Brackenridgea zanguebarica*, *Ochna afzelii* and*Ochna macrocalyx*. Orange cryst. (EtOAc/hexane). Mp 211-213°. Obt. in 1988, was inadvertently ascribed to *Cordia goetzei* instead of *B. zanguebarica*.

2″,3″-Dihydro: [113201-66-4] ***Calodenin A***
$C_{30}H_{22}O_9$ 526.498
Constit. of stem bark of *Ochna calodendron* and *Ochna afzelii*. Orange solid (Me_2CO/petrol). Mp 250-251°.

5-Hydroxy: [607374-24-3] ***Flavumone A***
$C_{30}H_{20}O_{10}$ 540.482
Constit. of the stem bark of *Ouratea flava*. Yellow cryst. (Me_2CO). Mp 240-241°.

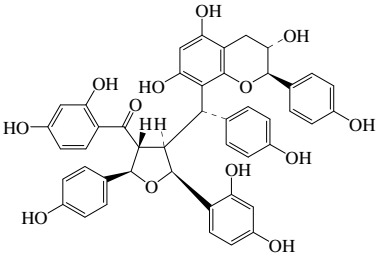
[117458-39-6, 118045-66-2]

Drewes, S.E. *et al., JCS Perkin 1*, 1987, 2809-2813 (*Calodenins A,B, struct*)
Marston, A. *et al., Helv. Chim. Acta*, 1988, **71**, 1210-1219 (*Cordia goetzei constit*)
Messanga, B. *et al., Phytochemistry*, 1994, **35**, 791-794 (*Ochna calodendron constits*)
Mbing, J.N. *et al., Phytochemistry*, 2003, **63**, 427-431 (*Flavumone A*)
Pegnyemb, D.E. *et al., Phytochemistry*, 2003, **64**, 661-665 (*Ochna afzelii isolates*)

Tang, S. *et al., Planta Med.*, 2003, **69**, 247-253 (*Calodenin B, Ochna macrocalyx constit, activity*)
Zintchem, A.A. *et al., Phytochemistry*, 2008, **69**, 2209-2213 (*Ouratea turnarea constit*)

Caloflavan A C-13

[436849-29-5]

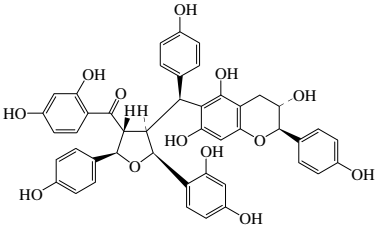


$C_{45}H_{38}O_{13}$ 786.787
Constit. of *Ochna calodendron*. Amorph. solid. $[\alpha]_D^{28}$ +31 (c, 0.015 in MeOH).

Messanga, B.B. *et al., Phytochemistry*, 2002, **59**, 435-438 (*Caloflavan A*)

Caloflavan B C-14

[436849-30-8]

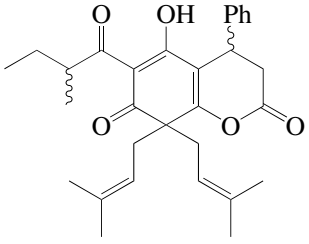


$C_{45}H_{38}O_{13}$ 786.787
Constit. of *Ochna calodendron*. Amorph. solid. $[\alpha]_D^{28}$ +28 (c, 0.04 in MeOH).

Messanga, B.B. *et al., Phytochemistry*, 2002, **59**, 435-438 (*Caloflavan B*)

Calofloride C-15

[88640-45-3]

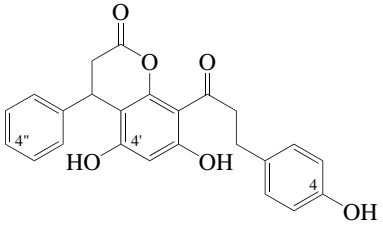


$C_{30}H_{36}O_5$ 476.611
Isol. from *Calophyllum verticillatum*. Cryst. ($CHCl_3$/Et_2O or hexane). Mp 110-112°. $[\alpha]_D$ +90 (c, 1 in $CHCl_3$). $[\alpha]_D$ +109 (c, 1 in Py). λ_{max} 212 (log ϵ 4.19); 245 (log ϵ 4.11); 295 (log ϵ 3.8); 335 (log ϵ 3.62) (no solvent reported).

Ramiandrasoa, F. *et al., Tetrahedron*, 1983, **39**, 3923-3928 (*Calofloride, struct*)

Calomelanol B C-16

*3,4-Dihydro-5,7-dihydroxy-8-[3-(4-hydroxyphenyl)-1-oxopropyl]-4-phenyl-2*H*-1-benzopyran-2-one,* 9CI [137319-45-0]



$C_{24}H_{20}O_6$ 404.418
Chalcone numbering shown. Constit. of the farinose exudate of *Pityrogramma calomelanos*. Amorph. powder. λ_{max} 283; 323 (MeOH).

4-Me ether: [137319-44-9] ***Calomelanol A***
$C_{25}H_{22}O_6$ 418.445
Constit. of *Pityrogramma calomelanos*. Amorph. powder. λ_{max} 283; 323 (MeOH).

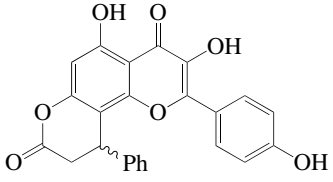
4-Deoxy: [73810-61-4] ***Calomelanol D_1***
$C_{24}H_{20}O_5$ 388.419
Constit. of *Pityrogramma calomelanos* and *Pityrogramma tartarea*. Prisms (MeOH). Mp 65.5-66° Mp 164° (double Mp). λ_{max} 285; 327 (MeOH).

4-Deoxy, 4″-hydroxy: [137319-46-1] ***Calomelanol C***
$C_{24}H_{20}O_6$ 404.418
Constit. of *Pityrogramma calomelanos*. Amorph. powder. λ_{max} 284; 325 (MeOH).

Iinuma, M. *et al., Z. Naturforsch., C*, 1986, **41**, 681-684 (*Calomelanol D_1, synth*)
Donnelly, D.M.X. *et al., Phytochemistry*, 1987, **26**, 1143-1145 (*Calomelanol D_1, cryst struct*)
Asai, F. *et al., Phytochemistry*, 1991, **30**, 3091-3093 (*Calomelanols A,B,D_1*)
Speranza, G. *et al., Synthesis*, 1997, 931-936 (*Calomelanol C, synth*)

Calomelanol D C-17

[141897-14-5]



$C_{24}H_{16}O_7$ 416.386
Tentative struct. shown. Constit. of *Pityrogramma calomelanos* and *Pityrogramma tartarea*. Yellow needles (MeOH). Mp 235° dec. $[\alpha]_D$-20 (c, 0.06 in MeOH).

3-Deoxy: [143244-91-1] ***Calomelanol F***
$C_{24}H_{16}O_6$ 400.387
Constit. of *Pityrogramma calomelanos* and *Pityrogramma tartarea*. Yellow powder. λ_{max} 270; 335 (MeOH).

4′-Deoxy: [151193-59-8]
$C_{24}H_{16}O_6$ 400.387
Constit. of *Pityrogramma calomelanos* and *Pityrogramma tartarea*. Pale yellow needles (EtOAc). Mp 233-234° dec. $[\alpha]_D$-140 (c, 0.18 in MeOH). λ_{max} 269; 310 (MeOH).

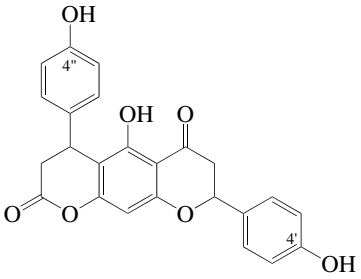
3,4′-Dideoxy: [73814-46-7]
$C_{24}H_{16}O_5$ 384.387
Constit. of *Pityrogramma calomelanos* and *Pityrogramma tartarea*. Cryst. (EtOAc).

[73814-45-6, 129529-45-9]

Asai, F. *et al., Heterocycles*, 1992, **33**, 229-233 (*Calomelanol D*)
Asai, F. *et al., Phytochemistry*, 1992, **31**, 2487-2490 (*Calomelanol F*)
Iinuma, M. *et al., Phytochemistry*, 1993, **33**, 1247-1248 (*derivs*)
Iinuma, M. *et al., Phytochemistry*, 1994, **36**, 941-943 (*Pityrogramma tartarea constits, struct*)

Calomelanol E C-18

[141897-15-6]



$C_{24}H_{18}O_7$ 418.402
Isol. from the farinose exudate of *Pityrogramma calomelanos*. Powder (MeOH). Mp 265° dec. $[\alpha]_D$-51 (c, 0.06 in MeOH).

4′-Me ether: [143228-44-8] ***Calomelanol G***
$C_{25}H_{20}O_7$ 432.429
Isol. from *Pityrogramma calomelanos*. Amorph. powder.

4′-Deoxy: [143228-46-0] ***Calomelanol I***
$C_{24}H_{18}O_6$ 402.403
Isol. from *Pityrogramma calomelanos*. Needles (Me_2CO/hexane). Mp 229-230° dec.

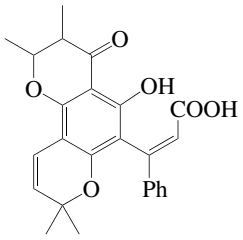
4″-Deoxy: [143228-45-9] ***Calomelanol H***
$C_{24}H_{18}O_6$ 402.403
Isol. from *Pityrogramma calomelanos*. Needles (Me_2CO/hexane). Mp 227° dec.

4′,4″-Dideoxy: [143291-31-0] ***Calomelanol J***
$C_{24}H_{18}O_5$ 386.403
Isol. from *Pityrogramma calomelanos*. Needles (Me_2CO/hexane). Mp 117-118°.

Asai, F. *et al., Heterocycles*, 1992, **33**, 229-233 (*Calomelanol E, struct*)
Asai, F. *et al., Phytochemistry*, 1992, **31**, 2487-2490 (*Calomelanols G-J*)

Calophyllic acid C-19

[36626-19-4]



$C_{25}H_{24}O_6$ 420.461
Constit. of *Calophyllum inophyllum*. Cryst. Mp 218°. $[\alpha]_D^{18}$-58 (c, 2.5 in $CHCl_3$). *Z*-Config. established. λ_{max} 272 (MeOH) (Berdy).

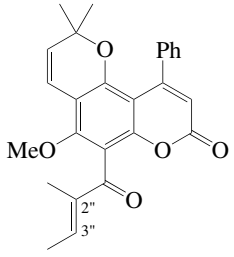
Lactone: see Inophyllum A, I-6

[477-23-6 (unspecified stereochem.)]

Polonsky, J. *et al., Bull. Soc. Chim. Fr.*, 1957, 1079-1087 (*Calophyllic acid, struct*)
Polonsky, J. *et al., Bull. Soc. Chim. Fr.*, 1958, 929-944 (*Calophyllic acid, struct*)
Gautier, J. *et al., Experientia*, 1972, **28**, 759-761 (*Calophyllic acid, config*)
Murti, V.V.S. *et al., Indian J. Chem.*, 1972, **10**, 19-22 (*Calophyllic acid, ms*)

Calophyllolide C-20

[548-27-6]



$C_{26}H_{24}O_5$ 416.473
Constit. of *Calophyllum inophyllum*, *Calophyllum bracteatum* and *Calophyllum brasiliense*. Antiinflammatory agent. Shows potent cytotoxic activity via induction of apoptosis; shows antibacterial activity against *Staphylococcus aureus*. Cryst. (MeOH). Mp 152-154°. Log P 5.81 (calc). λ_{max} 235; 270; 295 (MeOH) (Berdy).

▶ LD_{50} (mus, orl) 2500 mg/kg. DF4936700

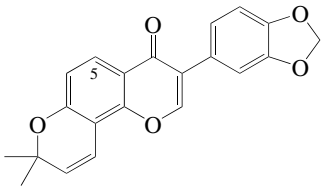
2″,3″-Dihydro, O-*de-Me:* ***Ponnalide***. *Mammea A/BB cyclo D*
[5302-74-9 (unspecified stereochem.), 34107-37-4 (unspecified stereochem.)]
$C_{25}H_{24}O_5$ 404.462
Isol. from the seeds of *Calophyllum inophyllum*. Cryst. Mp 159-160°.

2″,3″-Dihydro, O-*de-Me,* O-*Ac:* [36626-20-7]
Yellow cryst. ($CHCl_3$). Mp 216-218°.

Kunesch, G. *et al., Phytochemistry*, 1969, **8**, 1221-1226 (*Calophyllolide, biosynth*)
Murti, V.V.S. *et al., Indian J. Chem.*, 1972, **10**, 19-22 (*Calophyllolide, ms*)
Murti, V.V.S. *et al., Indian J. Chem.*, 1972, **10**, 255-257 (*2″,3″-dihydro O-de-Me O-Ac, synth, struct*)
Somanathan, R. *et al., JCS Perkin 1*, 1972, 1935-1943 (*Calophyllum bracteatum constit*)
Crombie, L. *et al., JCS Perkin 1*, 1987, 317-331 (*Ponnalide, synth*)
Palmer, C.J. *et al., Tet. Lett.*, 1994, **35**, 5363-5366 (*Calophyllolide, synth*)
Palmer, C.J. *et al., JCS Perkin 1*, 1995, 3135-3152 (*Calophyllolide, ponnalide, synth*)
Yimdjo, M.C. *et al., Phytochemistry*, 2004, **65**, 2789-2796 (*Calophyllolide, antibacterial activity*)
Ito, C. *et al., J. Pharm. Pharmacol.*, 2006, **58**, 975-980 (*Calophyllolide, cytotoxicity*)

Calopogoniumisoflavone B C-21

*3-(1,3-Benzodioxol-5-yl)-8,8-dimethyl-4*H,*8*H-*benzo[1,2-b:3,4-*b′*]dipyran-4-one,* 9CI [62502-14-1]



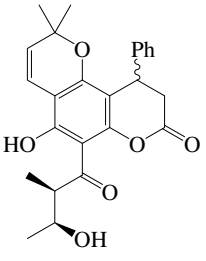
$C_{21}H_{16}O_5$ 348.354
Constit. of *Calopogonium mucunoides*, roots of *Tephrosia maxima* and of the grains of *Millettia pachyloba*. Pale-yellow cryst. (Et_2O). Mp 169-171°.

5-Hydroxy: [106009-67-0] ***7,8-(2,2-Dimethylpyrano)-5-hydroxy-3′,4′-methylenedioxyisoflavone***
$C_{21}H_{16}O_6$ 364.354
Constit. of *Derris spruceana* and *Derris scandens*. Yellow needles (EtOH). Mp 180°.

Vilain, C. *et al., Bull. Soc. R. Sci. Liege*, 1976, **45**, 468-475 (*Calopogonium mucunoides constit, isol, struct*)
Vilain, C. *et al., Bull. Soc. Chim. Belg.*, 1977, **86**, 237-240 (*synth*)
Murthy, M.S.R. *et al., J. Nat. Prod.*, 1985, **48**, 967-968 (*Tephrosia maxima constit*)
Murthy, M.S.R. *et al., Magn. Reson. Chem.*, 1986, **24**, 225-230 (*cmr*)
Garcia, M. *et al., Phytochemistry*, 1986, **25**, 2425-2427 (*Derris spruceana constit*)
Schuda, P.F. *et al., JOC*, 1987, **52**, 1972-1979 (*synth*)
Mahabusarakam, W. *et al., Phytochemistry*, 2004, **65**, 1185-1192 (*Derris scandens constit*)
Mai, H.D. *et al., Planta Med.*, 2010, **76**, 1739-1742 (*Millettia pachyloba constit*)

Calopolyanolide A C-22

*9,10-Dihydro-5-hydroxy-6-(3-hydroxy-2-methyl-1-oxobutyl)-2,2-dimethyl-10-phenyl-2*H,*8*H-*benzo[1,2-b:3,4-*b′*]dipyran-8-one,* 9CI [424837-93-4]



Relative Configuration

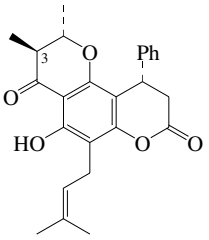
$C_{25}H_{26}O_6$ 422.477
Related to Calophyllolide, C-20. Constit. of the seeds of *Calophyllum polyanthum*. Pale yellow oil. $[\alpha]_D^{20}$-170.2 (c, 0.21 in $CHCl_3$).

Stereoisomer: [424838-05-1] ***Calopolyanolide B***
$C_{25}H_{26}O_6$ 422.477
Constit. of the seeds of *Calophyllum polyanthum*. Pale yellow oil. $[\alpha]_D^{20}$-105.5 (c, 0.24 in $CHCl_3$).

Chen, J.J. *et al., Yunnan Zhiwu Yanjiu*, 2001, **23**, 521-526 (*Calopolyanolides A,B, struct*)
Ma, C.-H. *et al., J. Nat. Prod.*, 2004, **67**, 1598-1600 (*Calopolyanolides A,B, isol*)

Calopolyanolide C C-23

[754214-30-7]



Relative Configuration

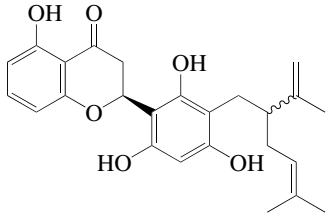
$C_{25}H_{26}O_5$ 406.477
Constit. of the seeds of *Calophyllum polyanthum*. Pale yellow needles ($CHCl_3$). Mp 127-128°. $[\alpha]_D^{20}$-193.2 (c, 0.13 in $CHCl_3$). λ_{max} 221 (log ϵ 4.33); 284 (log ϵ 4.18); 348 (log ϵ 3.56) (MeOH).

3-Epimer: [754214-28-3] ***Calopolyanolide D***
$C_{25}H_{26}O_5$ 406.477
Constit. of the seeds of *Calophyllum polyanthum*. Pale yellow needles ($CHCl_3$). Mp 157-158°. $[\alpha]_D^{20}$-34.1 (c, 0.13 in $CHCl_3$). λ_{max} 229 (log ϵ 4.32); 285 (log ϵ 4.18); 352 (log ϵ 3.55) (MeOH).

Ma, C.-H. *et al., J. Nat. Prod.*, 2004, **67**, 1598-1600 (*Calopolyanolides C,D, struct, rel config*)

Calycinigin A C-24

[1384180-74-8]



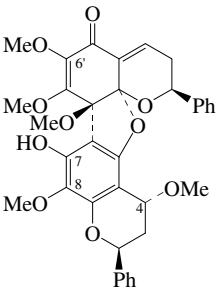
Absolute Configuration

$C_{25}H_{28}O_6$ 424.493
Constit. of the stems of *Hypericum calycinum*. Exhibits moderate activity against HeLa cells and antioxidant activity. Cryst. Mp 180-182°. $[\alpha]_D^{25}$-49.1 (c, 0.001 in MeOH). λ_{max} 292 (log ϵ 4.3); 334 (log ϵ 3.7) (MeOH).

Win, T. *et al., Chem. Biodiversity*, 2012, **9**, 1198-1204 (*Calycinigin A, activity*)

Calycopterone C-25

[156368-82-0]



Absolute Configuration

$C_{35}H_{34}O_{10}$ 614.648
Constit. of the leaves and flowers of *Calycopteris floribunda*. Cytotoxic agent. Cryst. (MeOH). Mp 222-223° (117°). $[\alpha]_D$-274 (c, 0.3 in $CHCl_3$). λ_{max} 289 (ϵ 12303) (MeOH).

7-Me ether: [247095-90-5] ***7*-O-*Methylcalycopterone***. *4*-O-*Methylneocalycopterone*
$C_{36}H_{36}O_{10}$ 628.674
Constit. of the leaves of *Calycopteris floribunda*. Pale yellow solid (Et_2O/petrol). Mp 115-116°. $[\alpha]_D^{19}$-225 (c, 0.12 in $CHCl_3$). λ_{max} 209 (ϵ 60000); 288 (ϵ 8600) (EtOH).

4-O-*De-Me:* [156370-80-8]
4-De*-O-*methylcalycopterone
$C_{34}H_{32}O_{10}$ 600.621
Constit. of the flowers of *Calycopteris floribunda*. Cytotoxic agent. Off-white powder. $[\alpha]_D$-327 (c, 0.3 in $CHCl_3$). λ_{max} 288 (ϵ 60250) (MeOH).

4-O-*De-Me, 7-Me ether:* [247122-60-7]
Neocalycopterone
$C_{35}H_{34}O_{10}$ 614.648
Constit. of the leaves of *Calycopteris floribunda*. Pale yellow solid (Et_2O/petrol). Mp 135-138°. $[\alpha]_D^{15}$-254 (c, 0.21 in $CHCl_3$). λ_{max} 209 (ϵ 60500); 288 (ϵ 10300) (EtOH).

8-O-*De-Me, 7-Me ether:* [156368-83-1]
Isocalycopterone
$C_{35}H_{34}O_{10}$ 614.648
Constit. of the flowers of *Calycopteris floribunda*. Cytotoxic agent. Amorph. powder. $[\alpha]_D$-274 (c, 0.3 in $CHCl_3$). λ_{max} 277 (ϵ 42700) (MeOH).

6′-Demethoxy, 4-O-*de-Me, 7-Me ether:* [701980-32-7] ***6″-Demethoxyneocalycopterone***
$C_{34}H_{32}O_9$ 584.621
Constit. of *Calycopteris floribunda*. Amorph. solid (Et_2O/petrol). Mp 157-159°. $[\alpha]_D^{20}$-199.1 (c, 0.35 in $CHCl_3$). λ_{max} 212 (ϵ 68770); 257 (ϵ 18350); 295 (sh) (EtOH).

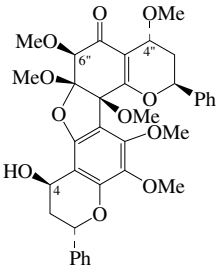
Wall, M.E. *et al., J. Med. Chem.*, 1994, **37**, 1465-1470 (*Calycopteris floribunda constits, cryst struct, activity*)

Mayer, R. *et al., J. Nat. Prod.*, 1999, **62**, 1274-1278 (*Neocalycopterones*)

Mayer, R. *et al., Phytochemistry*, 2004, **65**, 593-601 (*Calycopteris floribunda constits, cd, abs config*)

Calyflorenone B C-26

[247122-63-0]



Absolute Configuration

$C_{36}H_{38}O_{11}$ 646.69
Constit. of the leaves of *Calycopteris floribunda*. Pale yellow solid (Et_2O/petrol). Mp 113-115°. $[\alpha]_D^{15}$-30.6 (c, 0.16 in $CHCl_3$). λ_{max} 212 (ϵ 59000); 259 (ϵ 14000); 296 (ϵ 7500) (EtOH).

4-Me ether: [247122-61-8] ***Calyflorenone A***
$C_{37}H_{40}O_{11}$ 660.716
Constit. of the leaves of *Calycopteris floribunda*. Pale yellow solid (Et_2O/petrol). Mp 93-94°. $[\alpha]_D^{15}$-40.2 (c, 1 in $CHCl_3$). λ_{max} 213 (ϵ 50300); 258 (ϵ 11200); 292 (sh) (ϵ 5800) (EtOH).

4″-O-*De-Me:* [702644-92-6] ***Calyflorenone C***
$C_{35}H_{36}O_{11}$ 632.663
Constit. of *Calycopteris floribunda*. Amorph. solid (Et_2O/petrol). Mp 185°. $[\alpha]_D^{20}$-17.1 (c, 0.16 in $CHCl_3$). λ_{max} 213 (ϵ 52230); 258 (ϵ 12830); 294 (ϵ 6350) (EtOH).

6″-Demethoxy, 4″-O-*de-Me:* [702644-93-7] ***Calyflorenone D***
$C_{34}H_{34}O_{10}$ 602.637
Constit. of *Calycopteris floribunda*. Amorph. solid (Et_2O/petrol). Mp 108-114°. $[\alpha]_D^{20}$-27.5 (c, 0.14 in $CHCl_3$). λ_{max} 211 (ϵ 47740); 257 (ϵ 12750); 295 (ϵ 5920) (EtOH).

6″-Epimer: [701980-33-8] ***6″-Epicalyflorenone B***
$C_{36}H_{38}O_{11}$ 646.690
Constit. of *Calycopteris floribunda*. Amorph. solid (Et_2O/petrol). Mp 110-112°. $[\alpha]_D^{20}$-30 (c, 0.18 in $CHCl_3$). λ_{max} 212 (ϵ 63650); 257 (ϵ 17090); 294 (sh) (ϵ 7820) (EtOH).

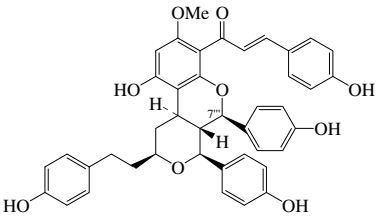
6″-Epimer, 4″-O-*de-Me:* [701980-34-9] ***6″-Epicalyflorenone C***
$C_{35}H_{36}O_{11}$ 632.663
Constit. of *Calycopteris floribunda*. Amorph. solid (Et_2O/petrol). $[\alpha]_D^{20}$-21.9 (c, 0.18 in $CHCl_3$). λ_{max} 215 (ϵ 75760); 257 (ϵ 23370); 295 (ϵ 11430) (EtOH).

Mayer, R. *et al., J. Nat. Prod.*, 1999, **62**, 1274-1278 (*Calyflorenones A,B, cd, struct*)

Mayer, R. *et al., Phytochemistry*, 2004, **65**, 593-601 (*Calycopteris floribunda constits*)

Calyxin I C-27

[252060-65-4]



$C_{42}H_{38}O_9$ 686.757
Constit. of the seeds of *Alpinia blepharocalyx*. Cytotoxic against human HT-1080 fibrosarcoma and murine colon 26-L5 carcinoma. Amorph. light yellow solid. $[\alpha]_D^{25}$-16.4 (c, 0.05 in MeOH).

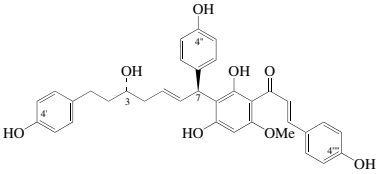
7‴-Epimer: [332877-80-2] ***Epicalyxin I***
$C_{42}H_{38}O_9$ 686.757
Constit. of the seeds of *Alpinia blepharocalyx*. Cytotoxic against human HT-1080 fibrosarcoma cells. Amorph. pale yellow solid. $[\alpha]_D^{25}$ +28.3 (c, 0.02 in MeOH).

Gewali, M.B. *et al., Org. Lett.*, 1999, **1**, 1733-1736 (*Calyxin I*)

Tezuka, Y. *et al., J. Nat. Prod.*, 2001, **64**, 208-213 (*Calyxin I, Epicalyxin I*)

Calyxin B C-28

[164991-53-1]



$C_{35}H_{34}O_8$ 582.649
Constit. of the seeds of *Alpinia blepharocalyx*. Amorph. light yellow solid. $[\alpha]_D$-24.7 (c, 0.4 in MeOH).

4′-Deoxy: [202596-22-3] ***Calyxin H***
$C_{35}H_{34}O_7$ 566.649
Constit. of the seeds of *Alpinia blepharocalyx*. Amorph. pale yellow solid. $[\alpha]_D$-4.7 (c, 0.2 in MeOH).

4′,4‴'-Dideoxy: [872422-19-0] ***Alpinnanin B***
$C_{35}H_{34}O_6$ 550.65
Constit. of the rhizomes of *Alpinia pinnanensis*. Pale yellow powder. $[\alpha]_D^{25}$-39.3 (c, 0.28 in MeOH).

4′,4″,4‴'-Trideoxy: [1221251-94-0] ***Katsumain A***
$C_{35}H_{34}O_5$ 534.651
Constit. of the seeds of *Alpinia katsumadai*. Pale yellow solid. $[\alpha]_D^{22}$-68.2 (c, 0.45 in MeOH).

3-Epimer, 4‴'-deoxy: [1337550-60-3] ***7-Epikatsumain C***
$C_{35}H_{34}O_7$ 566.649
Constit. of the seeds of *Alpinia katsumadai*. Amorph. yellow solid. $[\alpha]_D^{25}$-10.1 (c, 0.1 in MeOH). λ_{max} 216 (log ϵ 4.8); 288 (log ϵ 4.5); 347 (log ϵ 4.7) (MeOH).

3-Epimer, 4′,4‴′-dideoxy: [872422-18-9] ***Alpinnanin A***
$C_{35}H_{34}O_6$ 550.65
Constit. of the rhizomes of *Alpinia pinnanensis*. Pale yellow powder. $[\alpha]_D^{25}$-33.3 (c, 0.21 in MeOH).

7-Epimer: [164991-54-2] ***Epicalyxin B***
$C_{35}H_{34}O_8$ 582.649
Constit. of the seeds of *Alpinia blepharocalyx*. Exhibits antiproliferative props. against human fibrosarcoma and murine colon cancer cells. Amorph. light yellow solid. $[\alpha]_D$+11.5 (c, 0.5 in MeOH).

7-Epimer, 4′-deoxy: [202596-23-4] ***Epicalyxin H***
$C_{35}H_{34}O_7$ 566.649
Constit. of the seeds of *Alpinia blepharocalyx* and *Alpinia katsumadai*. Exhibits moderate antiproliferative activity against human fibrosarcoma and murine colon carcinoma cells. Amorph. pale yellow solid. $[\alpha]_D^{25}$+11.6 (c, 0.2 in MeOH).

7-Epimer, 4′,4‴′-dideoxy: [1337550-62-5] **ent-*Alpinnanin A***
$C_{35}H_{34}O_6$ 550.65
Constit. of the seeds of *Alpinia katsumadai*. Amorph. yellow solid. $[\alpha]_D^{25}$+5.8 (c, 0.07 in MeOH). λ_{max} 217 (log ϵ 4.9); 289 (log ϵ 4.5); 351 (log ϵ 4.8) (MeOH).

7-Epimer, 4′,4″,4‴′-trideoxy: [1221251-95-1] ***Katsumain B***
$C_{35}H_{34}O_5$ 534.651
Constit. of the seeds of *Alpinia katsumadai*. Pale yellow solid. $[\alpha]_D^{22}$+102 (c, 0.5 in MeOH).

3,7-Diepimer, 4′-deoxy: [1337550-63-6] **ent-*Calyxin H***
$C_{35}H_{34}O_7$ 566.649
Amorph. yellow solid. $[\alpha]_D^{25}$+22.5 (c, 0.1 in MeOH). λ_{max} 228 (log ϵ 4.7); 371 (log ϵ 4.8) (MeOH).

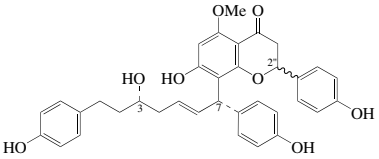
3,7-Diepimer, 4‴′-deoxy: [1337550-59-0] ***Katsumain C***
$C_{35}H_{34}O_7$ 566.649
Constit. of the seeds of *Alpinia katsumadai*. Amorph. yellow solid. $[\alpha]_D^{25}$+9.4 (c, 0.2 in MeOH). λ_{max} 217 (log ϵ 4.9); 288 (log ϵ 4.5); 348 (log ϵ 4.7) (MeOH).

3,7-Diepimer, 4′,4‴′-dideoxy: [1337550-61-4] **ent-*Alpinnanin B***
$C_{35}H_{34}O_6$ 550.65
Constit. of the seeds of *Alpinia katsumadai*. Amorph. yellow solid. $[\alpha]_D^{25}$+7 (c, 0.05 in MeOH). λ_{max} 217 (log ϵ 4.9); 289 (log ϵ 4.5); 350 (log ϵ 4.8) (MeOH).

Kadota, S. *et al., Chem. Pharm. Bull.*, 1994, **42**, 2647-2649 (*Calyxin B, Epicalyxin B*)
Prasain, J.K. *et al., Tetrahedron*, 1997, **53**, 7833-7842 (*Alpinia blepharocalyx constits, abs config*)
Prasain, J.K. *et al., J. Nat. Prod.*, 1998, **61**, 212-216 (*Calyxin H, Epicalyxin H*)
Ali, M.S. *et al., Biol. Pharm. Bull.*, 2001, **24**, 525-528 (*Epicalyxins B,H, activity*)
Giang, P.M. *et al., Chem. Pharm. Bull.*, 2005, **53**, 1335-1337 (*Alpinnanins A,B*)
Li, Y.-Y. *et al., Helv. Chim. Acta*, 2010, **93**, 382-388 (*Katsumains A,B*)
Nam, J.-W. *et al., J. Nat. Prod.*, 2011, **74**, 2109-2115 (*Katsumain C, 7-Epikatsumain C, ent-Alpinnanins A,B, ent-Calyxin H, Epicalyxin H*)

Calyxin C C-29

[193816-82-9 (3S,5E,7S)-form 2″-epimer, 193816-85-2 (3S,5E,7S)-form, 2″-epimer]



$C_{35}H_{34}O_8$ 582.649
Constit. of *Alpinia blepharocalyx*. Shows mod. antiproliferative activity against human and murine tumour cell lines. Inhibitor of NO prodn. in activated murine macrophages. Pale yellow amorph. solid. $[\alpha]_D$-55.1 (c, 0.24 in MeOH).

2″-Epimer: ***Epicalyxin C***
$C_{35}H_{34}O_8$ 582.649
Constit. of *Alpinia blepharocalyx*. Shows mod. antiproliferative activity against human and murine tumour cell lines. Inhibitor of NO prodn. in activated murine macrophages. Pale yellow amorph. solid. $[\alpha]_D$-38.9 (c, 0.8 in MeOH).

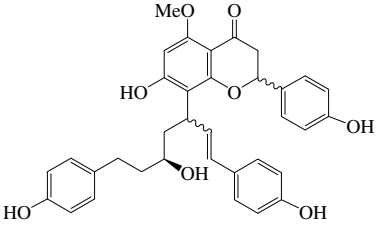
7-Epimer: ***Calyxin D***
[193816-86-3 (3S,5E,7R)-form, 2″-epimer, 193816-93-2 (3S,5E,7R)-form, 2″-epimer
$C_{35}H_{34}O_8$ 582.649
Constit. of *Alpinia blepharocalyx*. Shows mod. antiproliferative activity against human and murine tumour cell lines. Inhibitor of NO prodn. in activated murine macrophages. Pale yellow amorph. solid. $[\alpha]_D$+43 (c, 0.4 in MeOH).

2″,7-Diepimer: ***Epicalyxin D***
$C_{35}H_{34}O_8$ 582.649
Constit. of *Alpinia blepharocalyx*. Shows mod. antiproliferative activity against human and murine tumour cell lines. Inhibitor of NO prodn. in activated murine macrophages. Pale yellow amorph. solid. $[\alpha]_D$+26.6 (c, 0.45 in MeOH).

Prasain, J.K. *et al., Tetrahedron*, 1997, **53**, 7833-7842 (*Calyxins C,D, Epicalyxins C,D, struct, NO prodn inhibitor*)
Prasain, J.K. *et al., Biol. Pharm. Bull.*, 1998, **21**, 371-374 (*Calyxins C,D, Epicalyxins C,D: NO prodn inhibitor*)
Ali, M.A. *et al., Biol. Pharm. Bull.*, 2001, **24**, 525-528 (*antiproliferative activity*)

Calyxin E C-30

[205313-08-2]

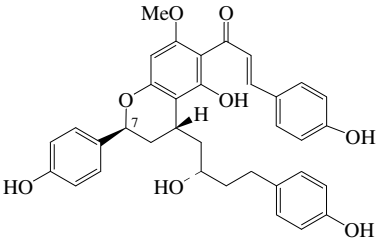


$C_{35}H_{34}O_8$ 582.649
Constit. of *Alpinia blepharocalyx*. Inhibits NO prodn. in activated murine macrophages. Pale yellow solid. $[\alpha]_D^{25}$+10.3 (c, 0.3 in MeOH).

Prasain, J.K. *et al., Biol. Pharm. Bull.*, 1998, **21**, 371-374 (*NO prodn inhibitor*)
Prasain, J.K. *et al., J. Chem. Res., Synop.*, 1998, 22-23 (*isol, struct*)

Calyxin F C-31

[205313-09-3]



$C_{35}H_{34}O_8$ 582.649
Struct. revised in 2006. Constit. of the seeds of *Alpinia blepharocalyx*. Pale yellow solid. $[\alpha]_D^{25}$+5.7 (c, 0.3 in MeOH). $[\alpha]_D^{25}$+16.3 (c, 0.18 in MeOH).

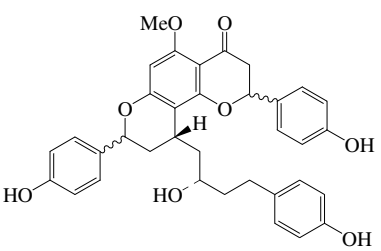
*6*S*-Hydroxy:* [205234-22-6] ***6-Hydroxycalyxin F***
$C_{35}H_{34}O_9$ 598.648
Constit. of *Alpinia blepharocalyx*. Pale yellow solid. $[\alpha]_D^{25}$-9 (c, 0.4 in MeOH). Struct. requires revision.

5,7-Diepimer: [960618-53-5] ***Epicalyxin F***
$C_{35}H_{34}O_8$ 582.649
Constit. of the seeds of *Alpinia blepharocalyx*. Cytotoxic. Active against human HT1080 sarcoma and murine 26-L5 carcinoma. The most active member of the group. Amorph. light yellow solid. $[\alpha]_D^{25}$+103.1 (c, 0.05 in MeOH). $[\alpha]_D^{25}$+13.2 (c, 0.2 in MeOH). Struct. finally confirmed in 2007.

Prasain, J.K. *et al., J. Chem. Res., Synop.*, 1998, 22-23 (*Calyxin F, 6-hydroxycalyxin F, struct*)
Gewali, M.B. *et al., Org. Lett.*, 1999, **1**, 1733-1736 (*Epicalyxin F, Calyxin F*)
Ali, M.S. *et al., Biol. Pharm. Bull.*, 2001, **24**, 525-528 (*activity*)
Tezuka, Y. *et al., J. Nat. Prod.*, 2001, **64**, 208-213 (*Epicalyxin F*)
Tian, X. *et al., JOC*, 2006, **71**, 3176-3183 (*synth, struct*)
Tian, X. *et al., Org. Lett.*, 2007, **9**, 4955-4958 (*Epicalyxin F, Calyxin F, revised struct, synth, abs config*)

Calyxin G C-32

[205313-11-7]



$C_{35}H_{34}O_8$ 582.649
Struct. revised in 2006. The structs. of this group are under revision. Constit. of *Alpinia blepharocalyx*. Isol. as a mixt. with its epimer.

Epimer: ***Epicalyxin G***
$C_{35}H_{34}O_8$ 582.649
Constit. of *Alpinia blepharocalyx*.

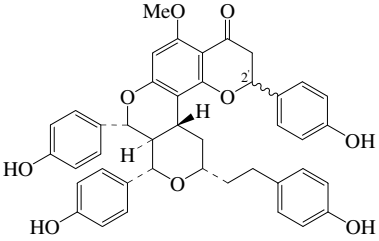
Stereoisomer(?): ***Calyxin K***†
$C_{35}H_{34}O_8$ 582.649
Constit. of the seeds of *Alpinia blepharocalyx*. Pale yellow amorph. solid. $[\alpha]_D^{25}$ +35.5 (c, 0.06 in MeOH). Struct. requires revision.

Stereoisomer(?): ***Epicalyxin K***†
$C_{35}H_{34}O_8$ 582.649
Constit. of the seeds of *Alpinia blepharocalyx*. Pale yellow amorph. solid. $[\alpha]_D^{25}$-17 (c, 0.08 in MeOH). Struct. requires revision.

Prasain, J.K. *et al., J. Chem. Res., Synop.*, 1998, 22-23 (*Calyxin G, Epicalyxin G, struct*)
Tezuka, Y. *et al., J. Nat. Prod.*, 2001, **64**, 208-213 (*Alpinia blepharocalyx constits, struct*)
Tian, X. *et al., JOC*, 2006, **71**, 3176-3183 (*Calyxin G, Epicalyxin G, struct, synth*)

Calyxin J C-33

[332877-81-3 (2′-epimer), 332877-82-4 (2′-epimer)]



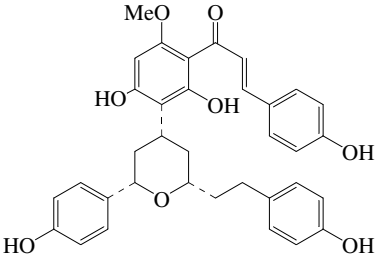
$C_{42}H_{38}O_9$ 686.757
Constit. of the seeds of *Alpinia blepharocalyx*. Amorph. pale yellow solid. $[\alpha]_D^{25}$ +99.2 (c, 0.18 in MeOH).

2′-Epimer: ***Epicalyxin J***
$C_{42}H_{38}O_9$ 686.757
Constit. of the seeds of *Alpinia blepharocalyx*. Shows potent antiproliferative activity against H-1080 fibrosarcoma cells. Amorph. pale yellow solid.

Ali, M.S. *et al., Biol. Pharm. Bull.*, 2001, **24**, 525-528 (*Epicalyxin J: antiproliferative activity*)
Tezuka, Y. *et al., J. Nat. Prod.*, 2001, **64**, 208-213 (*Calyxin J, Epicalyxin J, struct, abs config, cytotox*)

Calyxin L C-34

[252060-62-1]



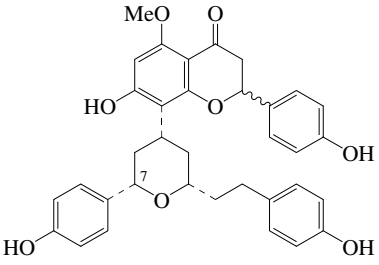
Absolute Configuration

$C_{35}H_{34}O_8$ 582.649
Struct. revised in 2006. Constit. of the seeds of *Alpinia blepharocalyx*. Amorph. pale yellow solid. $[\alpha]_D^{25}$ +77.1 (c, 0.05 in MeOH). $[\alpha]_D^{25}$ +103.1 (c, 0.05 in MeOH). Struct. reported in 2001 as Epicalyxin F.

Tezuka, Y. *et al., J. Nat. Prod.*, 2001, **64**, 208-213 (*struct*)
Tian, X. *et al., JOC*, 2006, **71**, 3176-3183 (*synth, revised struct*)

Calyxin M C-35

Calyxin K†



Absolute Configuration

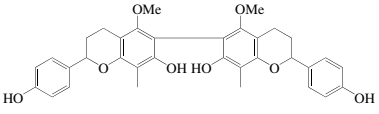
$C_{35}H_{34}O_8$ 582.649
Struct. revised in 2006. Constit. of the seeds of *Alpinia blepharocalyx*. Amorph. yellow solid. $[\alpha]_D^{25}$ +35.5 (c, 0.06 in MeOH). Obt. as a mixt. with its epimer. Confusing nomenclature in earlier lit.; this pair of epimeric structs. reported in 2001 as Calyxin K and Epicalyxin K.

7-Epimer: ***Epicalyxin M***. *Epicalyxin K*†
$C_{35}H_{34}O_8$ 582.649
Constit. of the seeds of *Alpinia blepharocalyx*. $[\alpha]_D$-17 (c, 0.085 in MeOH). Obt. as a mixt. with its epimer. Confusing nomenclature in earlier lit.; this pair of epimeric structs. reported in 2001 as Calyxin K and Epicalyxin K.

Tezuka, Y. *et al., J. Nat. Prod.*, 2001, **64**, 208-213 (*Calyxin K, Epicalyxin K, struct*)
Tian, X. *et al., JOC*, 2006, **71**, 3176-3183 (*Calyxin M, Epicalyxin M, struct, synth*)

Cambodianin E C-36

*3,3′,4,4′-Tetrahydro-2,2′-bis(4-hydroxyphenyl)-5,5′-dimethoxy-8,8′-dimethyl-[6,6′-bi-2*H*-1-benzopyran]-7,7′-diol,* CAS. *6,6′-Bi[4′,7′-dihydroxy-5-methoxy-8-methylflavanone]* [1430215-67-0]

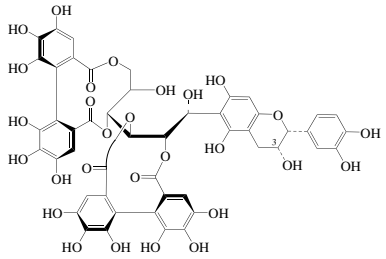


$C_{34}H_{34}O_8$ 570.638
Constit. of the Dragons blood *Dracaena cambodiana*. Inhibitor of *Staphylococcus aureus* and MRSA. Red cryst. Mp 181.1-184.9°. $[\alpha]_D^{20}$-0.87 (c, 0.58 in MeOH). λ_{max} 213 (log ϵ 3.72); 232 (log ϵ 3.78); 253 (log ϵ 2.92) (MeOH).

Chen, H.-Q. *et al., J. Asian Nat. Prod. Res.*, 2012, **14**, 436-440 (*Cambodianin E, activity*)

Camelliatannin C C-37

[154524-52-4]



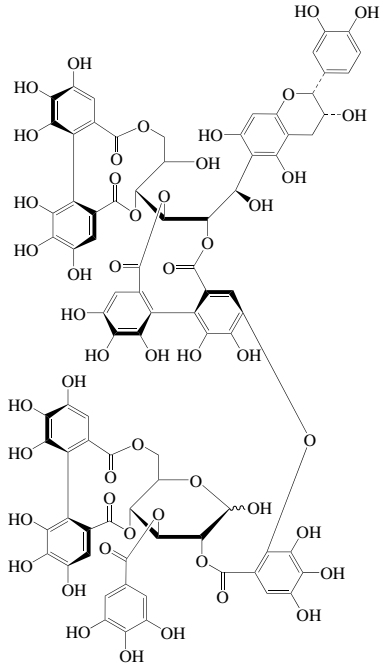
$C_{49}H_{38}O_{28}$ 1074.822
Constit. of the leaves of *Camellia japonica*. Off-white powder + $7H_2O$. $[\alpha]_D$+119 (c, 1.6 in MeOH). λ_{max} 207 (ϵ 95500); 230 (sh) (ϵ 61660) (MeOH).

3-Epimer: [172723-29-4] ***Stachyuranin B***
$C_{49}H_{38}O_{28}$ 1074.822
Constit. of the leaves of *Stachyurus praecox*. Off-white powder + $8H_2O$. $[\alpha]_D$+120 (c, 1 in MeOH). λ_{max} 207 (ϵ 93320); 230 (sh) (ϵ 66070); 260 (sh) (ϵ 33880) (MeOH).

Hatano, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1629-1633 (*Camellia japonica constit, struct*)
Han, L. *et al., Chem. Pharm. Bull.*, 1995, **43**, 2109-2114 (*Stachyurus praecox constit, struct*)

Camelliatannin D C-38

[148159-87-9]

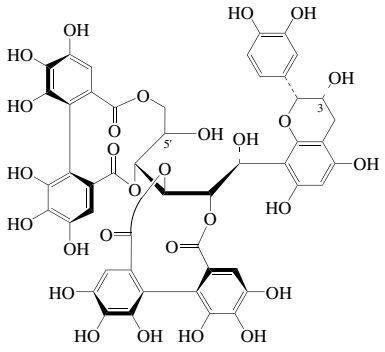


$C_{83}H_{62}O_{50}$ 1859.373
Constit. of the leaves of *Camellia japonica*. Inhibitor of bone resorption. Off-white powder + $12H_2O$. $[\alpha]_D$+46 (c, 0.9 in MeOH). λ_{max} 207 (ϵ 208930); 280 (sh) (ϵ 67610) (MeOH).

Hatano, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 2033-2036 (*Camelliatannin D, struct*)

Camelliatannin E C-39

[148132-92-7]



$C_{49}H_{38}O_{28}$ 1074.822
Constit. of the leaves of *Camellia japonica*. Off-white powder + $6H_2O$. $[\alpha]_D$+ 53 (c, 1 in MeOH). λ_{max} 208 (ϵ 97720); 231 (sh) (ϵ 67610); 260 (sh) (ϵ 35480) (MeOH).

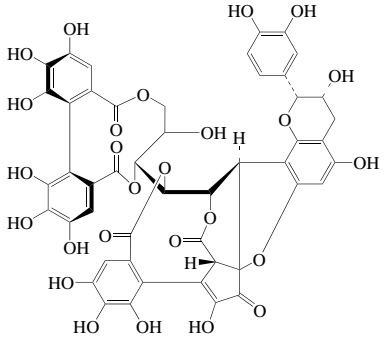
*3-Epimer, 5′-*O*-(3,4,5-trihydroxybenzoyl):* [172617-79-7] ***Stachyuranin A***
$C_{56}H_{42}O_{32}$ 1226.929
Constit. of the leaves of *Stachyurus praecox*. Off-white powder + $7H_2O$. $[\alpha]_D$-15 (c, 1 in MeOH). λ_{max} 209 (ϵ 109650); 231 (sh) (ϵ 72440); 265 (sh) (ϵ 36310) (MeOH).

Hatano, T. *et al., Chem. Pharm. Bull.*, 1995, **43**, 1629-1633 (*Camellia japonica constit, cd, struct*)

Han, L. *et al., Chem. Pharm. Bull.*, 1995, **43**, 2109-2114 (*Stachyurus praecox constit, cd, struct*)

Camelliatannin F C-40

[154561-15-6]

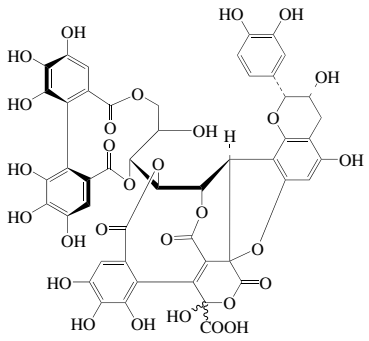


$C_{48}H_{34}O_{26}$ 1026.781
Constit. of the leaves of *Camellia japonica*. Off-white amorph. powder + $4H_2O$. $[\alpha]_D$-89 (c, 1.6 in MeOH). λ_{max} 209 (ϵ 89125); 230 (sh) (ϵ 58884); 265 (ϵ 31622) (MeOH).

Han, L. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1399-1409 (*Camelliatannin F, struct*)

Camelliatannin G C-41

[154524-53-5]

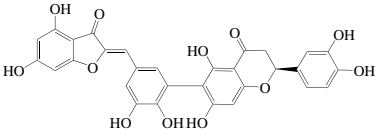


$C_{49}H_{34}O_{29}$ 1086.79
Constit. of the leaves of *Camellia japonica*. Pale yellow amorph. powder + $7H_2O$. $[\alpha]_D$-245 (c, 1 in MeOH). λ_{max} 213 (ϵ 79430); 234 (sh) (ϵ 57540); 282 (sh) (ϵ 17380) (MeOH).

Han, L. *et al., Chem. Pharm. Bull.*, 1994, **42**, 1399-1409 (*Camelliatannin G, cd, struct*)

Campylopusaurone C-42

[147044-47-1]



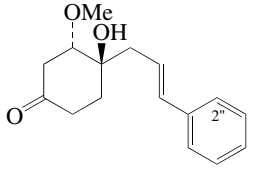
$C_{30}H_{20}O_{12}$ 572.481
Isol. from the mosses *Campylopus clavatus* and *Campylopus holomitrium*. λ_{max} 290; 340; 402 (MeOH).

Geiger, H. *et al., Phytochemistry*, 1992, **31**, 4325-4328 (*Campylopusaurone*)

Geiger, H. *et al., Z. Naturforsch., C*, 1993, **48**, 821-826 (*pmr, cmr*)

Candenatenin D C-43

4-Cinnamyl-4-hydroxy-3-methoxycyclohexanone [1179348-35-6]



Absolute Configuration

$C_{16}H_{20}O_3$ 260.332
Constit. of the heartwood of *Dalbergia candenatensis*. Exhibits modest activity against a HT-29 colon cancer cell line. Viscous oil. $[\alpha]_D^{27}$-24.9 (c, 0.25 in MeOH). Possible artifact. λ_{max} 204 (log ϵ 4.02); 221 (log ϵ 4.28); 257 (log ϵ 3.93) (MeOH).

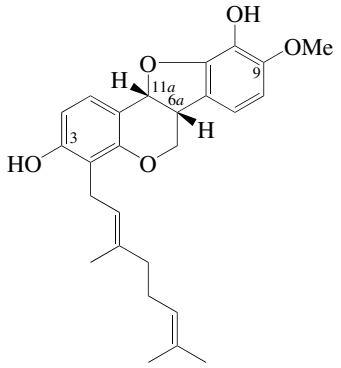
2″-Methoxy: [1456778-16-7] ***Candenatenin I***
$C_{17}H_{22}O_4$ 290.358
Constit. of heartwood of *Dalbergia candenatensis*. Viscous oil. $[\alpha]_D^{26}$-62.5 (c, 0.3 in $CHCl_3$). λ_{max} 210 (log ϵ 4.3); 253 (log ϵ 4.09); 300 (log ϵ 3.65) (MeOH).

Cheenpracha, S. *et al., J. Nat. Prod.*, 2009, **72**, 1395-1398 (*Candenatenin D, activity*)

Cheenpracha, S. *et al., Phytochem. Lett.*, 2012, **5**, 708-712 (*Candenatenin I*)

Candenatenin K C-44

4-(3,7-Dimethyl-2,6-octadienyl)-3,10-dihydroxy-9-methoxypterocarpan [1456778-18-9]

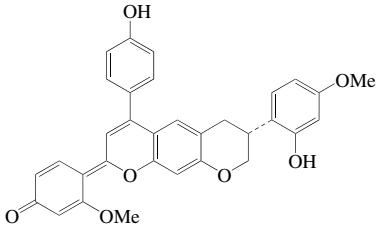


$C_{26}H_{30}O_5$ 422.52
Constit. of heartwood of *Dalbergia candenatensis*. Potent antioxidant. Viscous oil. $[\alpha]_D^{26}$-99.7 (c, 0.3 in $CHCl_3$). λ_{max} 210 (log ϵ 4.18); 298 (log ϵ 3.3) (MeOH).

Cheenpracha, S. *et al., Phytochem. Lett.*, 2012, **5**, 708-712 (*Candenatenin K, activity*)

Candenatone C-45

[115321-26-1]

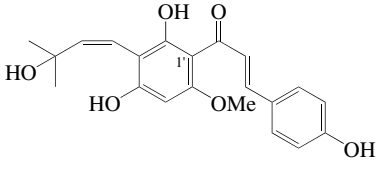


$C_{32}H_{26}O_7$ 522.553
Exists as a mixt. of tautomers in soln. Constit. of *Dalbergia candenatensis*. Purple cryst. (MeOH). Mp 230-233°. λ_{max} 365 (log ϵ 3.95); 498 (sh); 527 (log ϵ 4.58); 558 (log ϵ 4.53) (MeOH).

Hamburger, M.O. *et al., JOC*, 1988, **53**, 4161-4165 (*Candenatone*)

Candidachalcone C-46

1-[2,4-Dihydroxy-3-(3-hydroxy-3-methyl-1-butenyl)-6-methoxyphenyl]-3-(4-hydroxyphenyl)-2-propen-1-one [1301133-18-5]

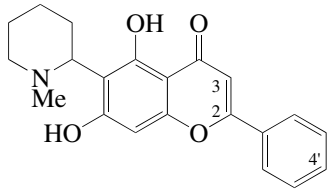


$C_{21}H_{22}O_6$ 370.401
Constit. of the aerial parts of *Tephrosia candida*. Estrogen receptor (ERx) ligand. Yellow powder. $[\alpha]_D^{25}$-3 (c, 0.1 in MeOH).

Hegazy, M.-E.F. *et al., J. Nat. Prod.*, 2011, **74**, 937-942 (*Candidachalcone, struct, ERx binding*)

Capitavine C-47

5,7-Dihydroxy-6-(1-methylpiperidin-2-yl)flavone [91147-11-4]



$C_{21}H_{21}NO_4$ 351.401
Alkaloid from the seeds of *Buchenavia capitata*. Cryst. (CH_2Cl_2/MeOH). Mp 146°. $[\alpha]_D$+6 (c, 0.6 in EtOH). λ_{max} 218; 277; 341 (EtOH).

N-*De-Me:* [91147-12-5] **N-*Demethylcapitavine***
$C_{20}H_{19}NO_4$ 337.374
Alkaloid from the fruits of *Buchenavia macrophylla*. Amorph. $[\alpha]_D$-11 (c, 0.34 in EtOH).

2,3-Dihydro: [91147-13-6] ***2,3-Dihydrocapitavine***
$C_{21}H_{23}NO_4$ 353.417
Alkaloid from the fruits of *Buchenavia macrophylla*. Amorph. $[\alpha]_D$0 (c, 1.49 in EtOH).

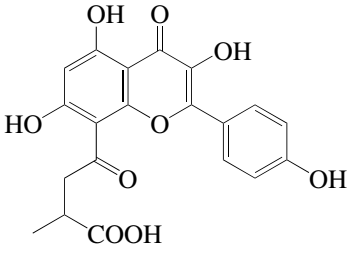
4′-Hydroxy: [91147-14-7] ***4′-Hydroxycapitavine***
$C_{21}H_{21}NO_5$ 367.401
Alkaloid from the seeds of *Buchenavia capitata* (Combretaceae). Cryst. ($MeOH/CH_2Cl_2$). Mp 170-172°. $[\alpha]_D$-11 (c, 0.2 in EtOH).

4′-Hydroxy, 2,3-dihydro: [91147-15-8] ***2,3-Dihydro-4′-hydroxycapitavine***
$C_{21}H_{23}NO_5$ 369.416
Alkaloid from the seeds of *Buchenavia capitata*. Amorph. $[\alpha]_D$+51 (c, 1.23 in EtOH).

Ahond, A. *et al., Bull. Soc. Chim. Fr.*, Part II, 1984, 41-45 (*Capitavines, Hydroxycapitavines*)

8-(3-Carboxybutanoyl)-3,4′,5,7-tetrahydroxyflavone C-48

8-(3-Methylsuccinoyl)kaempferol [116368-96-8]

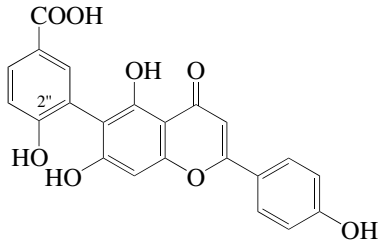


$C_{20}H_{16}O_9$ 400.341
Constit. of the flowers of *Lilium candidum*. Cryst. Mp 221-222°. Prob. a precursor of Lilaline, L-72.
λ_{max} 242; 249; 322; 371 (MeOH).

Bučková, A. *et al., Phytochemistry*, 1988, **27**, 1914-1915 (*3-Methylsuccinoylkaempferol*)

6-(5-Carboxy-2-hydroxyphenyl)-4′,5,7-trihydroxyflavone C-49

*3-[5,7-Dihydroxy-2-(4-hydroxyphenyl)-4-oxo-4*H*-1-benzopyran-6-yl]-4-hydroxybenzoic acid. 6-(5-Carboxy-2-hydroxyphenyl)apigenin* [1251862-99-3]



$C_{22}H_{14}O_8$ 406.348
Constit. of *Selaginella tamariscina*. Amorph. yellow powder. λ_{max} 223; 253; 339 (MeOH).

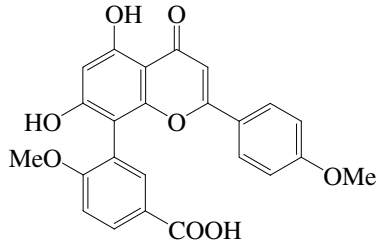
2″-Me ether: [1126431-72-8] *4-Methoxy-3-(4′,5,7-trihydroxy-6-flavonyl)benzoic acid. 6-(5-Carboxy-2-methoxyphenyl)apigenin*
$C_{23}H_{16}O_8$ 420.375
Constit. of *Selaginella uncinata*. Amorph. yellow powder. λ_{max} 272 (log ϵ 4.72); 333 (log ϵ 4.66) (MeOH).

Zheng, J.X. *et al., Chin. Chem. Lett.*, 2008, **19**, 1093-1095 (*Selaginella uncinata constit*)

Liu, J.F. *et al., Chem. Pharm. Bull.*, 2010, **58**, 549-551 (*Selaginella tamariscina constit*)

8-(5-Carboxy-2-methoxyphenyl)-5,7-dihydroxy-4′-methoxyflavone C-50

[438051-00-4]

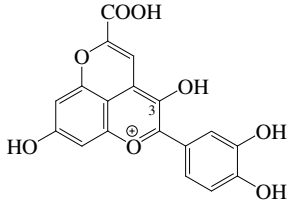


$C_{24}H_{18}O_8$ 434.401
Constit. of *Ginkgo biloba*. Brown powder. $[\alpha]_D^{25}$+10 (c, 0.04 in MeOH). λ_{max} 216 (log ϵ 1.93); 272 (log ϵ 1.41); 324 (log ϵ 1) (MeOH).

Bedir, E. *et al., J. Agric. Food Chem.*, 2002, **50**, 3150-3155 (*Ginkgo biloba constit, struct*)

5-Carboxypyranocyanidin C-51

*5-Carboxy-2-(3,4-dihydroxyphenyl)-3,8-dihydroxypyrano[4,3,2-*de*]-1-benzopyrilium, 9CI. Cyanidin-pyruvate*



$C_{18}H_{11}O_8^{\oplus}$ 355.28

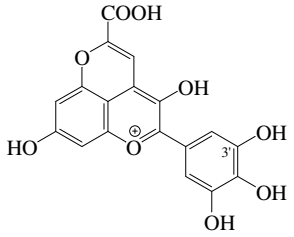
3-O-β-D-Glucopyranoside: [312297-96-4 (chloride)]
$C_{24}H_{21}O_{13}^{\oplus}$ 517.422
Constit. of *Allium cepa*. Counterion not specified. λ_{max} 270; 296; 352; 504 (MeCN aq./formic acid).

3-O-(6-O-Malonyl-β-D-glucopyranoside): [566942-53-8]
$C_{27}H_{23}O_{16}^{\oplus}$ 603.469
Constit. of *Allium cepa*. Counterion not specified.

Fossen, T. *et al., Phytochemistry*, 2003, **62**, 1217-1220 (*Allium cepa constits, struct*)
Oliveira, J. *et al., Anal. Chim. Acta*, 2006, **563**, 2-9 (*3-glucoside, uv*)
Oliveira, J. *et al., J. Agric. Food Chem.*, 2006, **54**, 6894-6903 (*3-glucoside, pmr, cmr*)
Blanco-Vega, D. *et al., J. Agric. Food Chem.*, 2011, **59**, 9523-9531 (*3-glucoside, uv, ms*)

5-Carboxypyranodelphinidin C-52

*5-Carboxy-3,8-dihydroxy-2-(3,4,5-trihydroxyphenyl)pyrano[4,3,2-*de*]-1-benzopyrilium, 9CI. Delphinidin-pyruvate*



$C_{18}H_{11}O_9^{\oplus}$ 371.28

3-O-β-D-Glucopyranoside: [736121-38-3]
$C_{24}H_{21}O_{14}^{\oplus}$ 533.422
Constit. of some wines. Exhibits anti-inflammatory props. λ_{max} 299; 368; 509 (MeCN aq./formic acid).

3′-Me ether: 5-Carboxypyranopetunidin. Petunidin-pyruvate
$C_{19}H_{13}O_9^{\oplus}$ 385.306

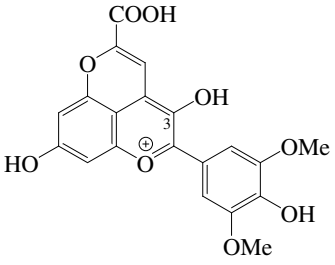
3′-Me ether, 3-O-β-D-glucopyranoside: [403982-49-0]
$C_{25}H_{23}O_{14}^{\oplus}$ 547.448
Constit. of some wines. λ_{max} 269; 298; 370; 510 (MeCN aq./formic acid).

3′,5′-Di-Me ether, 3-O-(6-acetyl-β-D-glucopyranoside): [209862-96-4] ***Acetylvitisin A***
$C_{28}H_{27}O_{16}^{\oplus}$ 619.512
Constit. of some red wines and port wine. λ_{max} 270; 300; 371; 514 (MeCN aq./formic acid).

Mateus, N. *et al., J. Agric. Food Chem.*, 2001, **49**, 4836-4840 (*Acetylvitisin A*)
Garcia-Alonso, M. *et al., J. Agric. Food Chem.*, 2004, **52**, 3378-3384 (*3-glucoside, activity*)
Jordheim, M. *et al., J. Agric. Food Chem.*, 2006, **54**, 3572-3577 (*synth, pmr, cmr*)
Asenstorfer, R.E. *et al., Tetrahedron*, 2007, **63**, 4788-4792 (*Acetylvitisin A*)
Blanco-Vega, D. *et al., J. Agric. Food Chem.*, 2011, **59**, 9523-9531 (*3′-Me ether 3-glucoside*)

5-Carboxypyranomalvidin C-53

*5-Carboxy-3,8-dihydroxy-2-(4-hydroxy-3,5-dimethoxyphenyl)pyrano[4,3,2-*de*]-1-benzopyrilium, 9CI. Malvidin-pyruvate. Vitisidin A*



$C_{20}H_{15}O_9^{\oplus}$ 399.333

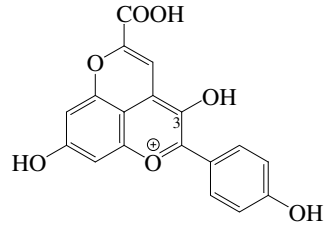
Struct. revised in 1998.

3-O-β-D-Glucopyranoside: [184362-09-2] *Malvidin 3-glucoside-pyruvate.* ***Vitisin A***† [209862-95-3, 388089-38-1]
$C_{26}H_{25}O_{14}^{\oplus}$ 561.475
Constit. of some red wines. Not to be confused with Vitisin A, V-16. λ_{max} 269; 299; 371; 511 (MeCN aq./formic acid).

Bakker, J. *et al., J. Agric. Food Chem.*, 1997, **45**, 35-43 (*Vitisin A, Vitisidin A*)
Bakker, J. *et al., Phytochemistry*, 1997, **44**, 1375-1382 (*Vitisin A, uv*)
Fulcrand, H. *et al., Phytochemistry*, 1998, **47**, 1401-1407 (*Vitisin A, struct*)
Schwartz, M. *et al., J. Agric. Food Chem.*, 2004, **52**, 498-504 (*red wine constit, ms*)
Jordheim, M. *et al., J. Agric. Food Chem.*, 2006, **54**, 3572-3577 (*synth, pmr, cmr*)
Oliveira, J. *et al., J. Agric. Food Chem.*, 2006, **54**, 6894-6903 (*Vitisin A, synth*)
Asenstorfer, R.E. *et al., Tetrahedron*, 2007, **63**, 4788-4792 (*Vitisin A, props*)
Blanco-Vega, D. *et al., J. Agric. Food Chem.*, 2011, **59**, 9523-9531 (*Vitisin A, uv*)
Oliveira, J. *et al., Tet. Lett.*, 2013, **54**, 5106-5110 (*Vitisin A, uv, pmr, equilib*)

5-Carboxypyranopelargonidin C-54

*5-Carboxy-3,8-dihydroxy-2-(4-hydroxyphenyl)pyrano[4,3,2-*de*]-1-benzopyrilium, 9CI. Pelargonidin-pyruvate*



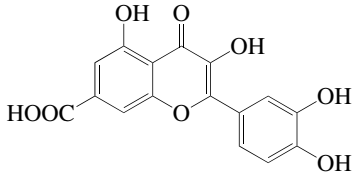
$C_{18}H_{11}O_7^{\oplus}$ 339.281

3-O-β-D-Glucopyranoside: [680227-23-0]
$C_{24}H_{21}O_{12}^{\oplus}$ 501.423
Constit. of the fruit of *Fragaria ananassa*. λ_{max} 495 (ϵ 22000) (MeOH aq./HCl).

Andersen, O.M. *et al., Phytochemistry*, 2004, **65**, 405-410 (*3-glucoside, struct*)

7-Carboxy-3,3′,4′,5-tetrahydroxyflavone C-55

*2-(3,4-Dihydroxyphenyl)-3,5-dihydroxy-4-oxo-4*H*-1-benzopyran-7-carboxylic acid. 7-Carboxy-3′,4′,5-trihydroxyflavonol*



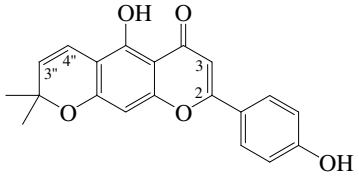
$C_{16}H_{10}O_8$ 330.25

4′-Me ether, Me ester: [150351-11-4] *3,3′,5-Trihydroxy-4′-methoxy-7-methoxycarbonylflavone*
$C_{18}H_{14}O_8$ 358.304
Constit. of *Tanacetum microphyllum*. Antiinflammatory agent. Cryst.

Abad, M.J. *et al., J. Nat. Prod.*, 1993, **56**, 1164-1167 (*Tanacetum microphyllum constit*)

Carpachromene C-56

*5-Hydroxy-8-(4-hydroxyphenyl)-2,2-dimethyl-2*H*,6*H*-benzo[1,2-*b*:5,4-*b′*]dipyran-6-one, 9CI* [57498-96-1]



$C_{20}H_{16}O_5$ 336.343
Constit. of *Flindersia laevicarpa* and *Ficus formosana*. Shows significant cytotoxicity against Hep G2, PLC/PRF/5 and Raji cancer cell lines. Yellow cryst. (EtOAc). Mp 239-241°.

Di-Ac: [57498-97-2]
Cryst. Mp 239-241°.

Di-Me ether: [61828-61-3] ***Di-O-methylcarpachromene***
$C_{22}H_{20}O_5$ 364.397
Constit. of *Lonchocarpus xuul* and *Lonchocarpus yucatanensis*. Yellow needles ($CHCl_3$ or petrol/Me_2CO). Mp 137-140° Mp 155-156°. λ_{max} 249 (log ϵ 3.65); 353 (log ϵ 3.66) (MeOH).

3′-Methoxy: [461677-63-4] ***3′-Methoxycarpachromene***
$C_{21}H_{18}O_6$ 366.370
Constit. of *Lonchocarpus xuul* and *Lonchocarpus yucatanensis*. Amorph. yellow powder. Mp 218-222°. λ_{max} 264 (log ϵ 4.15); 347 (log ϵ 4.14) (MeOH).

2,3-Dihydro: [170900-13-7] ***Paratocarpin K***
[70872-26-3 (2S-form)]
$C_{20}H_{18}O_5$ 338.359
Constit. of *Paratocarpus venenosa* (*Artocarpus venenosa*) (Moraceae). Pale yellow prisms (hexane/$CHCl_3$). Mp 165-166°.

3″,4″-Dihydro: [76288-44-3] ***3″,4″-Dihydrocarpachromene***
$C_{20}H_{18}O_5$ 338.359
Constit. of *Dorstenia kameruniana*. Yellow plates (hexane/EtOAc). Mp 243-244°. λ_{max} 215 (log ϵ 4.58); 272 (log ϵ 4.42); 334 (log ϵ 4.5) (MeOH).

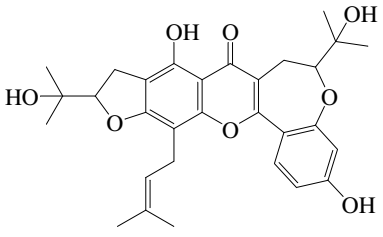
3″,4″-Dihydro, 3″ξ-hydroxy: ***Dinklagin B***
[487010-50-4 ((+)-form)]
$C_{20}H_{18}O_6$ 354.359
Constit. of the twigs of *Dorstenia dinklagei*. Yellowish powder (hexane/EtOAc). Mp 265-268°. $[\alpha]_D^{25}$ +48 (c, 0.01 in MeOH). λ_{max} 215 (log ϵ 4.47); 271 (log ϵ 4.24); 301 (sh) (log ϵ 4.14); 334 (log ϵ 4.31) (MeOH).

*3″,4″-Dihydro, 4″*R*-hydroxy:* ***3″,4″-Dihydro-4″-hydroxycarpachromene***
[918549-38-9 (R-form)]
$C_{20}H_{18}O_6$ 354.359
Constit. of *Eysenhardtia platycarpa*. Yellow powder. Mp 254-255°. $[\alpha]_D^{25}$ + 0.3 (c, 0.1 in MeOH). λ_{max} 218 (log ϵ 4.47); 301 (log ϵ 4.14); 334 (log ϵ 4.31) (MeOH).

Roy, D. *et al., Indian J. Chem., Sect. B*, 1978, **16**, 463-464 (*Carpachromene*)
Jain, A.C. *et al., Tetrahedron*, 1978, **34**, 3569-3573 (*Carpachromene, di-Ac, di-Me ether, synth*)
Banerji, A. *et al., Indian J. Chem., Sect. B*, 1990, **29**, 163-165 (*di-Me ether, synth*)
Banerji, A. *et al., Spectrosc. Lett.*, 1991, **24**, 471-483 (*Carpachromene, pmr, struct*)
Hano, Y. *et al., Heterocycles*, 1995, **41**, 2313-2326 (*Paratocarpin K*)
Saraswathy, A. *et al., Fitoterapia*, 1998, **69**, 463-464 (*Carpachromene, cmr*)
Abegaz, B.M. *et al., Phytochemistry*, 1998, **49**, 1147-1150 (*3″,4″-Dihydrocarpachromene*)
Borges-Argaez, R. *et al., Phytochemistry*, 2002, **60**, 533-540 (*3′-Methoxycarpachromene, Di-O-methylcarpachromene*)
Ngadjui, B.T. *et al., Phytochemistry*, 2002, **61**, 99-104 (*Dinklagin B*)
Sheu, Y. *et al., Planta Med.*, 2005, **71**, 1165-1167 (*Ficus formosana constit, cytotox*)
Narváez-Mastache, J.M. *et al., J. Nat. Prod.*, 2006, **69**, 1687-1691 (*3″,4″-Dihydro-4″-hydroxycarpachromene*)

Carpelastofuran C-57

[404889-57-2]

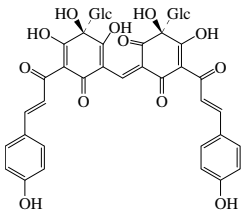


$C_{30}H_{34}O_8$ 522.594
Constit. of *Artocarpus elasticus*. Cytotoxic. Cytotoxic to human renal cancer, human breast cancer and human melanoma (UACC-62) cells. Yellow cryst. (Me_2CO). Mp 236-238°. Opt. inactive. λ_{max} 215 (log ϵ 5.4); 274 (log ϵ 5.1); 344 (log ϵ 5.1) (MeOH).

Cidade, H.M. *et al., Planta Med.*, 2001, **67**, 867-870 (*Carpelastofuran, activity*)

Carthamin C-58

C.I. Natural Red 26 [36338-96-2]



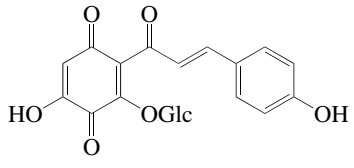
Absolute Configuration

$C_{43}H_{42}O_{22}$ 910.792
Red pigment of flower petals of *Carthamus tinctorius*. Red needles (Py). Mp 228-230°.

Takahashi, Y. *et al., Tet. Lett.*, 1982, **23**, 5163-5166 (*struct*)
Obara, H. *et al., Chem. Lett.*, 1986, 495-496 (*analog, synth*)
Nakano, K. *et al., J. Chromatogr., A*, 1988, **438**, 61-72 (*hplc*)
Saito, K. *et al., Biochem. Physiol. Pflanz.*, 1989, **184**, 145-153 (*isol*)
Sato, S. *et al., Chem. Lett.*, 1996, 833-834 (*R,S-analogs, synth, cd, abs config*)
Watanabe, T. *et al., Biosci., Biotechnol., Biochem.*, 1997, **61**, 1179-1183 (*chromatog, anal*)
Kazuma, K. *et al., Biosci., Biotechnol., Biochem.*, 2000, **64**, 1588-1599 (*occur, isol, biosynth*)
Sato, S. *et al., Tetrahedron*, 2005, **61**, 9630-9636 (*analogs, synth, biosynth, bibl*)

Carthamone C-59

[479-52-7]



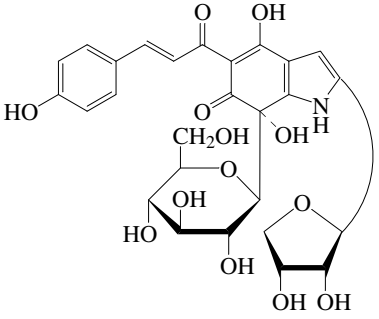
$C_{21}H_{20}O_{11}$ 448.382
Isol. from flowers of *Carthamus tinctorius*, also obt. by oxidn. of Carthamin. Red pigment. Obara has queried the validity of this struct.

[86579-00-2 (aglycone)]

Seshadri, T.R. *et al., Curr. Sci.*, 1960, **29**, 54-55 (*struct*)
Harborne, J.B. *et al., Comparative Biochemistry of the Flavonoids*, Academic Press, 1967, 80 (*occur*)
Obara, H. *et al., Chem. Lett.*, 1974, 1357-1360

Cartormin C-60

[273917-39-8]

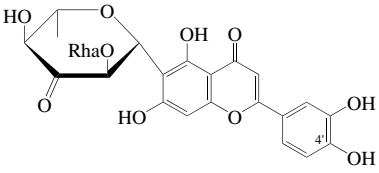


$C_{27}H_{29}NO_{13}$ 575.525
Enolised β-diketone. Constit. of *Carthamus tinctorius*. Yellow prisms (MeOH). $[\alpha]_D^{27}$-153.4 (c, 0.01 in Py). Mp >230° dec.

Yin, H.-B. *et al., Tet. Lett.*, 2000, **41**, 1955-1958 (*Cartormin, cryst struct*)
Zhang, G. *et al., Chem. Nat. Compd. (Engl. Transl.)*, 2009, **45**, 398-401 (*Cartormin, struct*)
Jiang, J.-S. *et al., Org. Lett.*, 2010, **12**, 1196-1199 (*cd, struct*)
Feng, Z.-M. *et al., J. Nat. Prod.*, 2013, **76**, 270-274 (*struct*)

Cassiaoccidentalin B C-61

[259876-00-1]



$C_{27}H_{28}O_{14}$ 576.51
Constit. of *Cassia occidentalis*, *Fargesia robusta* and *Mimosa pudica*. Shows antioxidant activity. Pale yellow needles (MeOH aq.). Mp 194°. $[\alpha]_D$-63.6 (c, 1 in MeOH). λ_{max} 211 (log ϵ 4.43); 229 (sh); 245 (log ϵ 4.13); 258 (log ϵ 4.16); 270 (log ϵ 4.16); 350 (log ϵ 4.22) (MeOH).

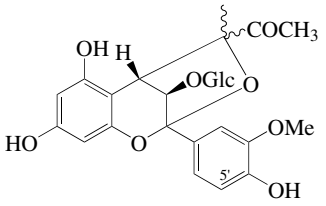
4′-Me ether: [259876-01-2] ***Cassiaoccidentalin C***
$C_{28}H_{30}O_{14}$ 590.537
Constit. of *Cassia occidentalis*. Pale yellow needles (MeOH aq.). Mp 193°. $[\alpha]_D$-55.6 (c, 1 in MeOH). λ_{max} 215 (log ϵ 4.57); 271 (log ϵ 4.38); 336 (log ϵ 4.42) (MeOH).

3′-Deoxy: [259875-99-5] ***Cassiaoccidentalin A***
$C_{27}H_{28}O_{13}$ 560.51
Constit. of *Cassia occidentalis*. Pale yellow needles (MeOH aq.). Mp 175°. $[\alpha]_D$-80.1 (c, 1 in MeOH). λ_{max} 215 (log ϵ 4.57); 271 (log ϵ 4.38); 336 (log ϵ 4.42) (MeOH).

Hatano, T. *et al., Phytochemistry*, 1999, **52**, 1379-1383 (*Cassiaoccidentalins A,B,C*)
Lobstein, A. *et al., Biochem. Syst. Ecol.*, 2002, **30**, 375-377 (*Mimosa pudica constit*)
Hoyweghen, L.V. *et al., J. Nat. Prod.*, 2010, **73**, 1573-1577 (*Fargesia robusta constit, antioxidant activity*)

Castavinol C-62

[183607-09-2]



$C_{26}H_{30}O_{13}$ 550.515
Isol. from a Bordeaux red wine.

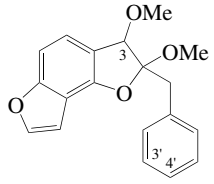
5′-Hydroxy: [183607-17-2] ***5′-Hydroxycastavinol***
$C_{26}H_{30}O_{14}$ 566.515
Isol. from a Bordeaux red wine.

5′-Methoxy: [183607-16-1] ***5′-Methoxycastavinol***
$C_{27}H_{32}O_{14}$ 580.541
Isol. from a Bordeaux red wine. $[\alpha]_D$+46 (c, 0.2 in H_2O). λ_{max} 269 (no solvent reported).

Castagnino, C. *et al., Tet. Lett.*, 1996, **37**, 7739-7742 (*red wine constits, struct*)

Castillene B C-63

[126585-61-3]



$C_{19}H_{18}O_4$ 310.349
Constit. of *Lonchocarpus castilloi*. Shows fungistatic activity against *Lenzites trabea*. Yellow oil. Sol. MeOH, hexane; poorly sol. H_2O. $[\alpha]_D$+36.8 (c, 1.25 in $CHCl_3$). λ_{max} 211 (ϵ 4678); 244 (ϵ 4696); 252 (ϵ 47533); 281 (ϵ 16282); 293 (ϵ 16118) (MeOH) (Berdy).

3-Ketone, O^3-de-Me: [126585-60-2] ***Castillene A***
$C_{18}H_{14}O_4$ 294.306
Constit. of *Lonchocarpus castilloi*. Shows fungistatic activity against *Lenzites trabea*. Yellow oil. Sol. MeOH, hexane; poorly sol. H_2O. $[\alpha]_D$+32.12 (c, 1.6 in $CHCl_3$). λ_{max} 236 (ϵ 6481); 277 (ϵ 3470); 332 (ϵ 32590) (MeOH) (Berdy).

4,4′,5-Trimethoxy, O^3-de-Me, 3-ketone: [1356540-04-9] ***4,4′,5-Trimethoxycastillene A***
[1140471-61-9]
$C_{21}H_{20}O_7$ 384.385
Constit. of the root barks of *Lonchocarpus araripensis* and *Lonchocarpus campestris*. Resin. $[\alpha]_D^{20}$+96 (c, 0.004 in $CHCl_3$).

3′,4′-Methylenedioxy: [126585-62-4] ***Castillene C***
$C_{20}H_{18}O_6$ 354.359
Constit. of *Lonchocarpus castilloi*. Shows fungistatic activity activity against *Lenzites trabea*. Yellow oil. Sol.

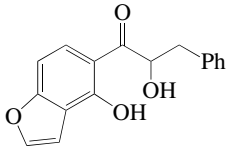
MeOH, hexane; poorly sol. H_2O. $[\alpha]_D$ +72.6 (c, 1.9 in $CHCl_3$). λ_{max} 238 (ϵ 4078); 252 (ϵ 3463); 284 (ϵ 6530); 293 (ϵ 6713) (MeOH) (Berdy).

3′,4′-Methylenedioxy, 3-ketone, O^3*-de-Me:* [126585-63-5] ***Castillene D***
$C_{19}H_{14}O_6$ 338.316
Constit. of *Lonchocarpus castilloi*. Shows fugistatic activity against *Lenzites trabea*; shows termite antifeedant activity against *Cryptotermes brevis*. Yellow solid. Sol. MeOH, hexane; poorly sol. H_2O. Mp 121°. $[\alpha]_D$ +25.7 (c, 1.7 in $CHCl_3$). λ_{max} 203 (ϵ 15916); 235 (ϵ 15271); 286 (ϵ 4143); 329 (ϵ 1501) (MeOH) (Berdy).

Gómez-Garibay, F. *et al., Phytochemistry*, 1990, **29**, 459-463 (*Castillenes A-D, fungistatic activity*)
Reyes-Chilpa, R. *et al., J. Chem. Ecol.*, 1995, **21**, 455-463 (*Castillene D, termite antifeedant activity*)
Lima, A.F. *et al., Magn. Reson. Chem.*, 2009, **47**, 165-168 (*4,4′,5-Trimethoxycastillene A*)
Pires, A.M.L. *et al., Quim. Nova*, 2011, **34**, 268-271 (*Lonchocarpus campestris constit*)

Castillene E C-64

[126585-64-6]

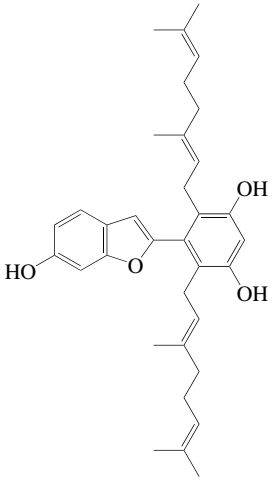


$C_{17}H_{14}O_4$ 282.295
Constit. of *Lonchocarpus castilloi*. Shows fungicidal activity against *Lenzites trabea*. Yellow oil or cryst. (Et_2O). Sol. MeOH, hexane; poorly sol. H_2O. Mp 72-73°. λ_{max} 205 (ϵ 18800); 236 (ϵ 28651); 277 (ϵ 8301); 339 (ϵ 3141) (MeOH) (Berdy). λ_{max} 205 (ϵ 18441); 236 (ϵ 28651); 277 (ϵ 8301); 333 (ϵ 3140) (MeOH).

Gómez-Garibay, F. *et al., Phytochemistry*, 1990, **29**, 459-463 (*Castillen E, activity*)
Reyes-Chilpa, R. *et al., J. Chem. Ecol.*, 1995, **21**, 455-464 (*Lonchocarpus castelloi constit*)

Cathafuran A C-65

2-(2,6-Digeranyl-3,5-dihydroxyphenyl)-6-hydroxybenzofuran [1134468-18-0]

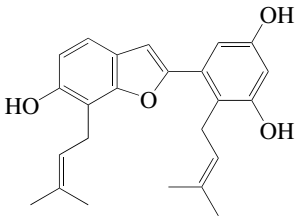


$C_{34}H_{42}O_4$ 514.703
Constit. of the stem bark of *Morus cathayana*. Yellowish powder. λ_{max} 207 (log ϵ 4.71); 253 (log ϵ 3.98); 295 (log ϵ 4.12) (MeOH).

Ni, G. *et al., J. Nat. Prod.*, 2009, **72**, 966-968 (*Cathafuran A, struct*)

Cathafuran B C-66

2-(3,5-Dihydroxy-2-prenylphenyl)-6-hydroxy-7-prenylbenzofuran. Artonitidin B [1134468-20-4]

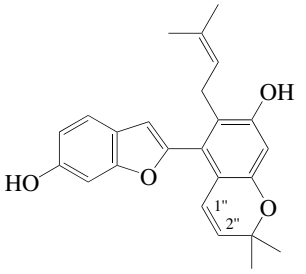


$C_{24}H_{26}O_4$ 378.467
Constit. of the stem bark of *Morus cathayana* and stems of *Artocarpus nitidus*. Shows moderate cytotoxic activity against a range of human cancer cell lines. Amorph. powder. λ_{max} 204 (log ϵ 4.43); 309 (log ϵ 4.15) (MeOH) (Cathafuran B). λ_{max} 212 (log ϵ 4.45); 310 (log ϵ 4.14) (MeOH) (Artonitidin B).

Zhao, T. *et al., Chem. Biodiversity*, 2009, **6**, 2209-2216 (*Artonitidin B, struct*)
Ni, G. *et al., J. Nat. Prod.*, 2009, **72**, 966-968 (*Cathafuran B, struct, cytotoxicity*)

Cathafuran C C-67

[1134468-22-6]



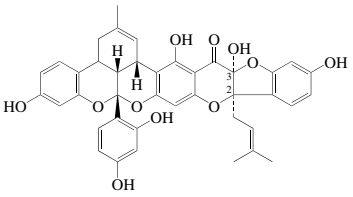
$C_{24}H_{24}O_4$ 376.451
Constit. of the stem bark of *Morus cathayana*. Shows moderate cytotoxic activity against a range of human cancer cell lines. Yellow powder. λ_{max} 208 (log ϵ 4.5); 250 (sh) (log ϵ 4.11); 274 (sh) (log ϵ 4.02); 299 (log ϵ 4.07) (MeOH).

*1″,2″-Dihydro, 2″*S*-hydroxy:* [1134468-24-8] ***Cathafuran D***
$C_{24}H_{26}O_5$ 394.466
Constit. of the stem bark of *Morus cathayana*. Yellow powder. $[\alpha]_D^{20}$-13.5 (c, 0.02 in MeOH). 2″*S*-Config. tentatively assigned on basis of negative opt. rotn. λ_{max} 212 (log ϵ 4.4); 271 (sh) (log ϵ 3.87); 296 (log ϵ 3.95) (MeOH).

Ni, G. *et al., J. Nat. Prod.*, 2009, **72**, 966-968 (*Cathafurans C,D, struct, cytotoxicity*)

Cathayanin B C-68

[330195-60-3]



Relative Configuration

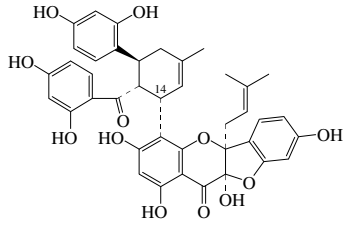
$C_{40}H_{34}O_{11}$ 690.702
Constit. of the stem bark of *Morus cathayana*. Cytotoxic to various human carcinoma cells. Amorph. yellow powder. $[\alpha]_D^{20}$ +380 (c, 0.11 in MeOH).

2,3-Diepimer: [330195-61-4] ***Cathayanin C***
$C_{40}H_{34}O_{11}$ 690.702
Constit. of the stem of *Morus cathayana*. Cytotoxic to various human carcinoma cells. Amorph. yellow powder. $[\alpha]_D^{20}$ +337 (c, 0.02 in MeOH).

Ni, G. *et al., J. Asian Nat. Prod. Res.*, 2010, **12**, 505-515 (*Cathayanins B,C, activity*)

Cathayanon A C-69

[366479-65-4]



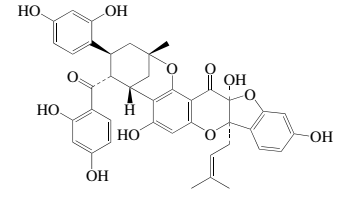
$C_{40}H_{36}O_{12}$ 708.717
Constit. of the root bark of *Morus cathayana*. Inhibitor of cell adhesion in bovine arterial endothelium cells. Pale yellow cryst. (MeOH). Mp 180-181° dec. $[\alpha]_D^{19}$-193.9 (c, 0.12 in MeOH). λ_{max} 205; 230 (sh); 282; 310 (MeOH).

14-Epimer: [366479-66-5] ***Cathayanon B***
$C_{40}H_{36}O_{12}$ 708.717
Constit. of the root bark of *Morus cathayana*. Inhibitor of cell adhesion in bovine arterial endothelium cells. Yellow powder. $[\alpha]_D^{19}$-733.7 (c, 0.18 in MeOH). Errror in CAS struct. λ_{max} 205; 230 (sh); 282; 310 (MeOH).

Shen, R.-C. *et al., Phytochemistry*, 2001, **57**, 1231-1235 (*Cathayanons A,B, cryst struct, activity*)

Cathayanon E C-70

[1193476-95-7]



Absolute Configuration

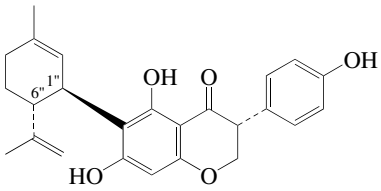
$C_{40}H_{36}O_{12}$ 708.717

Related to Sanggenon D, S-26. Constit. of the stem bark of *Morus cathayana*. Amorph. yellow powder. $[\alpha]_D^{20}$ +189.1 (c, 0.1 in MeOH). λ_{max} 206 (log ϵ 4.73); 282 (log ϵ 4.33); 306 (log ϵ 4.26) (MeOH).

Zhang, Q.-J. *et al., J. Asian Nat. Prod. Res.*, 2009, **11**, 267-273 (*Cathayanon E*)

Cathayanon F **C-71**

[1303438-49-4]

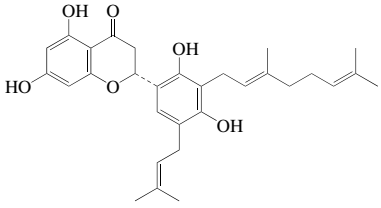


$C_{25}H_{26}O_5$ 406.477

1″,6″-Configs. are relative only. Constit. of the stem bark of *Morus cathayana*. Exhibits weak cytotoxicity against various tumour cell lines. Amorph. yellow powder. $[\alpha]_D^{20}$ +90 (c, 0.15 in MeOH). λ_{max} 204 (log ϵ 4.56); 227 (sh) (log ϵ 4.5); 297 (log ϵ 4.35); 353 (log ϵ 3.56) (MeOH).

Ni, G. *et al., J. Asian Nat. Prod. Res.*, 2010, **12**, 505-515 (*Cathayanon F, activity*)

Cathayanon J **C-72**



Absolute Configuration

$C_{30}H_{36}O_6$ 492.611

(2R,2″E)-form [1303438-53-0]

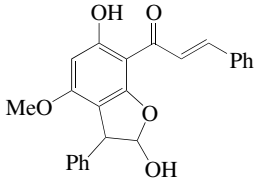
3′-Geranyl-2′,4′,5,7-tetrahydroxy-5′-prenylflavanone VK6340.

Constit. of the stem bark of *Morus cathayana*. Exhibits weak cytotoxicity against various tumour cell lines. Amorph. yellow powder. $[\alpha]_D^{20}$-8.3 (c, 0.11 in MeOH). λ_{max} 211 (log ϵ 4.69); 228 (sh) (log ϵ 4.42); 289 (log ϵ 4.2); 336 (sh) (log ϵ 3.52) (MeOH).

Ni, G. *et al., J. Asian Nat. Prod. Res.*, 2010, **12**, 505-515 (*Cathayanon J*)

Cathayenone A **C-73**

[1442665-33-9]



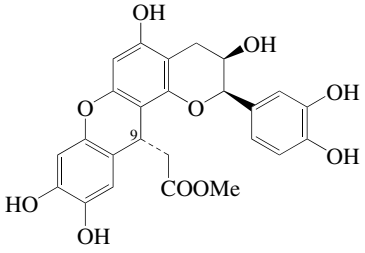
$C_{24}H_{20}O_5$ 388.419

Constit. of the husks of *Carya cathayensis*. Antifungal agent. Amorph. yellow powder. Mp 193-196°. $[\alpha]_D^{20}$-7.5 (c, 0.04 in EtOH). λ_{max} 202 (log ϵ 4.63); 337 (log ϵ 4.38) (EtOH).

Zhang, S.-Y. *et al., Phytochem. Lett.*, 2012, **5**, 473-475 (*Cathayenone A*)

Catiguanin A **C-74**

Catuabin A [1001609-86-4]



Absolute Configuration

$C_{25}H_{22}O_{10}$ 482.443

Constit. of the bark of *Anemopaegma arvense* and *Trichilia catigua*. Antioxidant. Amorph. solid or orange powder. $[\alpha]_D^{20}$-100.6 (c, 1.1 in MeOH). $[\alpha]_D^{25}$-58.9 (c, 0.5 in Me_2CO). λ_{max} 228 (log ϵ 1.3); 256 (log ϵ 1.28); 276 (log ϵ 1.55) (MeOH).

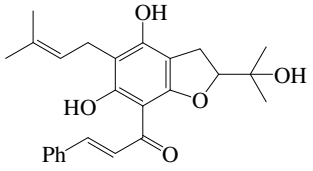
9-Epimer: [1001609-88-6] ***Catiguanin B***
$C_{25}H_{22}O_{10}$ 482.443
Constit. of *Eriobotrya poilanei* and *Trichilia catigua*. Antioxidant. Amorph. solid. $[\alpha]_D^{20}$-56.7 (c, 2.5 in MeOH). λ_{max} 282 (log ϵ 2.64) (MeOH).

Tang, W. *et al., J. Nat. Prod.*, 2007, **70**, 2010-2013 (*Catiguanins A,B*)

Tabanca, N. *et al., Planta Med.*, 2007, **73**, 1107-1111 (*Catuabin A, activity*)

Cedrediprenone **C-75**

[554408-33-2]



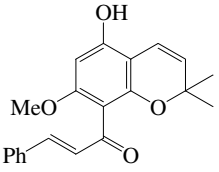
$C_{25}H_{28}O_5$ 408.493

Constit. of the seeds and fruit of *Cedrelopsis grevei*. Antioxidant. Yellow cryst. Mp 153°. $[\alpha]_D^{22}$-3.6 (c, 0.07 in CH_2Cl_2). λ_{max} 216 (log ϵ 4.11); 261 (log ϵ 4.83); 268 (log ϵ 4.84); 346 (log ϵ 4.74) (MeOH).

Koorbanally, N.A. *et al., Phytochemistry*, 2003, **62**, 1225-1229 (*Cedrediprenone, struct, activity*)

Cedreprenone **C-76**

1-(5-Hydroxy-7-methoxy-2,2-dimethyl-2H-1-benzopyran-8-yl)-3-phenyl-2-propen-1-one, 9CI. 8-Cinnamoyl-5-hydroxy-2,2-dimethyl-7-methoxy-2H-1-benzopyran [554408-31-0]



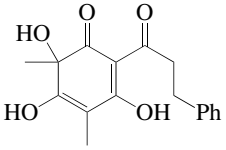
$C_{21}H_{20}O_4$ 336.387

Constit. of the seeds and fruits of *Cedrelopsis grevei*. Yellow cryst. Mp 134°. λ_{max} 218 (log ϵ 5.05); 291 (log ϵ 5.4); 336 (log ϵ 5.4) (MeOH).

Koorbanally, N.A. *et al., Phytochemistry*, 2003, **62**, 1225-1229 (*Cedreprenone, struct*)

Ceratiolin **C-77**

3,5,6-Trihydroxy-4,6-dimethyl-2-(1-oxo-3-phenylpropyl)-2,4-cyclohexadien-1-one, CAS [106869-61-8]



$C_{17}H_{18}O_5$ 302.326

Blocked dihydrochalcone. Constit. of *Ceratiola ericoides*. Pale yellow cryst. (C_6H_6 or MeOH). Mp 148-149°. Racemic. λ_{max} 227 (ϵ 28840); 326 (ϵ 30199); 354 (ϵ 33113) (MeOH).

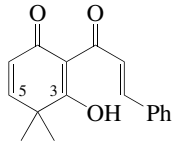
Tanrisever, N. *et al., Phytochemistry*, 1987, **26**, 175-179 (*Ceratiola eriocoides constit*)

Obara, H. *et al., Bull. Chem. Soc. Jpn.*, 1989, **62**, 3371-3372 (*synth*)

Tak, H. *et al., Acta Cryst. C*, 1993, **49**, 1990-1992 (*cryst struct*)

Ceroptin† **C-78**

3-Hydroxy-4,4-dimethyl-2-(1-oxo-3-phenyl-2-propenyl)-2,5-cyclohexadien-1-one, 9CI. 2-Cinnamoyl-3-hydroxy-4,4-dimethyl-2,5-cyclohexadien-1-one [55601-61-1]



$C_{17}H_{16}O_3$ 268.312

Enolised β-triketone. Tautomeric with the 3′-oxo form. Blocked chalcone. Constit. of *Pityrogramma triangularis*.

5-Methoxy: [56015-03-3] *3-Hydroxy-5-methoxy-4,4-dimethyl-2-(1-oxo-3-phenyl-2-propenyl)-2,5-cyclohexadien-1-one.* ***Ceroptene.*** *Ceroptin†*
$C_{18}H_{18}O_4$ 298.338
Constit. of *Pityrogramma triangularis*. Yellow cryst. (MeOH). Mp 137-140° (135°). Some confusion in the lit. between these two compds. and the name Ceroptin has been applied to both. λ_{max} 230; 295 (sh); 365 (MeOH).

Blasdale, W.C. *et al., JACS*, 1903, **25**, 1141-1152 (*Ceroptene*)

Nilsson, M. *et al., Acta Chem. Scand.*, 1959, **13**, 750-757 (*Ceroptene, struct*)

Forsen, S. *et al., Acta Chem. Scand.*, 1959, **13**, 1383-1394 (*pmr*)

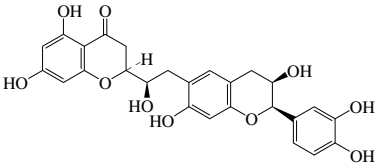
Bick, I.R.C. *et al., Aust. J. Chem.*, 1965, **18**, 1405-1410 (*tautom*)

Star, A.E. *et al., Phytochemistry*, 1975, **14**, 2275-2278 (*Ceroptene*)

Dreyer, D.L. *et al., Tetrahedron*, 1975, **31**, 287-293 (*cmr*)

Chaenomone C-79

[572890-29-0]

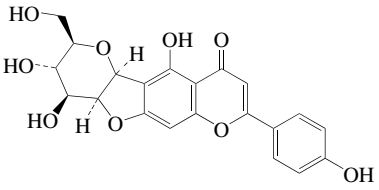


$C_{26}H_{24}O_{10}$ 496.470
Constit. of the twigs of *Chaenomeles sinensis*. Amorph. yellow powder (MeOH). Mp > 300°. $[\alpha]_D^{21}$ +115 (c, 0.05 in MeOH).

Gao, H.Y. *et al., Chin. Chem. Lett.*, 2003, **14**, 274-275 (*Chaenomone, struct*)

Chafuroside A C-80

4′,5,7-Trihydroxyflavone-(6→1,7→2)-β-D-glucopyranoside [720684-57-1]

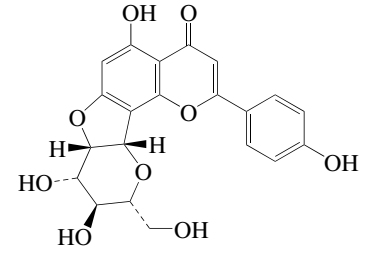


$C_{21}H_{18}O_9$ 414.368
Constit. of tea leaves (*Camellia sinensis*). Potent antiinflammatory agent. Shows antiallergic activity. Yellow needles (MeOH). Mp 229-232°. $[\alpha]_D^{20}$-174.5 (c, 0.17 in MeOH) (synthetic). $[\alpha]_D^{26}$-45 (c, 0.6 in MeOH) (natural). λ_{max} 273 (log ϵ 4.39); 330 (log ϵ 4.34) (MeOH).

Nakatsuka, T. *et al., Bioorg. Med. Chem. Lett.*, 2004, **14**, 3201-3203 (*Chafuroside A, synth, antiinflammatory activity*)
Furuta, T. *et al., Tetrahedron*, 2004, **60**, 9375-9379 (*Chafuroside A, synth*)
Eur. Pat., 2005, (*Suntory*), 1 533 313 (*Chafuroside A, struct, antiallergic activity*)
Ishida, H. *et al., J. Agric. Food Chem.*, 2009, **57**, 6779-6786 (*Chafuroside A, occur, anal*)
Furuta, T. *et al., Org. Lett.*, 2009, **11**, 2233-2236 (*Chafuroside A, synth*)

Chafuroside B C-81

[866737-00-0]

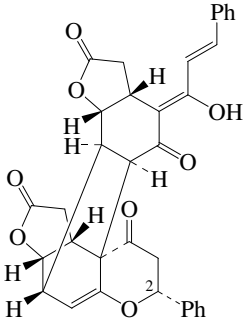


$C_{21}H_{18}O_9$ 414.368
Constit. leaves of *Camellia sinensis*. Potent antiinflammatory agent. Shows antiallergic activity. Light yellow powder or yellow cryst. (MeOH). Mp 205-208°. $[\alpha]_D^{26}$-23 (c, 0.6 in MeOH). $[\alpha]_D^{20}$-169.3 (c, 0.17 in MeOH) (synthetic). λ_{max} 270 (log ϵ 4.31); 326 (log ϵ 4.24) (MeOH).

Eur. Pat., 2005, (*Suntory*), 1 533 313 (*antiallergic activity*)
Ishida, H. *et al., J. Agric. Food Chem.*, 2009, **57**, 6779-6786 (*Chafuroside B, anal, chromatogr*)
Furuta, T. *et al., Org. Lett.*, 2009, **11**, 2233-2236 (*Chafuroside B: isol, synth*)

Chalcocaryanone A C-82

[371195-54-9]



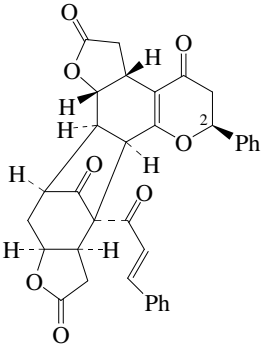
$C_{34}H_{28}O_8$ 564.59
Constit. of *Cryptocarya infectoria*. Amorph. yellow powder. $[\alpha]_D^{25}$ +123.1 (c, 0.32 in $CHCl_3$). λ_{max} 200 (ϵ 34400); 267 (ϵ 11390); 297 (ϵ 9580); 378 (ϵ 10520) (EtOH).

2-Epimer: [371195-55-0] ***Chalcocaryanone B***
$C_{34}H_{28}O_8$ 564.59
Constit. of *Cryptocarya infectoria*. Amorph. yellow powder. $[\alpha]_D^{25}$ +41.2 (c, 1 in $CHCl_3$). λ_{max} 200 (ϵ 45490); 268 (ϵ 13170); 376 (ϵ 16790) (EtOH).

Dumontet, V. *et al., Tetrahedron*, 2001, **57**, 6189-6196 (*Chalcocaryanones A,B*)

Chalcocaryanone C C-83

[371195-57-2]



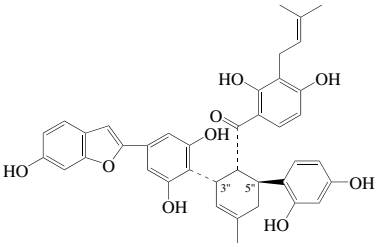
$C_{34}H_{28}O_8$ 564.59
Constit. of *Cryptocarya infectoria*. Amorph. powder. $[\alpha]_D^{25}$ +139.5 (c, 0.6 in $CHCl_3$). λ_{max} 201 (ϵ 25930); 304 (ϵ 15800) (EtOH).

2-Epimer: [371195-58-3] ***Chalcocaryanone D***
$C_{34}H_{28}O_8$ 564.59
Constit. of *Cryptocarya infectoria*. Amorph. powder. $[\alpha]_D^{25}$ +160.7 (c, 1.1 in $CHCl_3$). λ_{max} 208 (ϵ 17473); 303 (ϵ 21100) (EtOH).

Dumontet, V. *et al., Tetrahedron*, 2001, **57**, 6189-6196 (*Chalcocaryanones C,D*)

Chalcomoracin C-84

[76472-89-4]



Absolute Configuration

$C_{39}H_{36}O_9$ 648.708
Phytoalexin from *Morus alba*, *Morus mongolica*, *Morus notabilis* and *Morus bombycis*. Shows significant phosphodiesterase (PDE1) inhibitory activity. Cryst. Mp 183° dec. $[\alpha]_D$ +194 (Me_2CO). λ_{max} 218 (ϵ 58600); 294 (sh) (ϵ 33900); 329 (ϵ 50500); 334 (ϵ 41300) (MeOH).

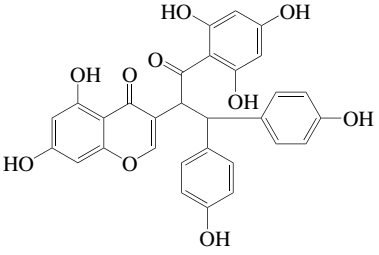
3″-Epimer: [345898-70-6] ***Mongolicin F***
$C_{39}H_{36}O_9$ 648.708
Constit. of *Morus mongolica*. Inhibits liver microsomal lipid peroxidation. Amorph. yellow powder. $[\alpha]_D^{25}$-283 (c, 0.11 in MeOH). λ_{max} 206; 291; 319; 334 (MeOH).

3″,5″-Diepimer: [1067461-23-7] ***Sorocenol H***
$C_{39}H_{36}O_9$ 648.708
Constit. of the roots of *Sorocea muriculata*. Shows significant selective antimicrobial activity against MRSA and antifungal activity against *Candida albicans*, *Cryptococcus neoformans* and *Aspergillus fumigatus*. Amorph. red solid. $[\alpha]_D^{27}$ +46 (c, 0.20 in MeOH).

Takasugi, M. *et al., Chem. Lett.*, 1980, 1573-1576 (*Chalcomoracin, struct, rel config*)
Hano, Y. *et al., Heterocycles*, 1988, **27**, 2315-2326 (*Chalcomoracin, abs config*)
Hano, Y. *et al., Chem. Pharm. Bull.*, 1989, **37**, 554-556 (*Chalcomoracin, biosynth*)
Hano, Y. *et al., Heterocycles*, 1999, **50**, 989-994 (*Chalcomoracin, biosynth*)
Kang, J. *et al., Planta Med.*, 2006, **72**, 52-59 (*Morus mongolica constits, struct, lipid peroxidation inhibitor*)
Ross, S.A. *et al., J. Nat. Prod.*, 2008, **71**, 1764-1767 (*Sorocenol H, struct, cd, abs config, antifungal, antimicrobial activities*)
Fozing, C.D.A. *et al., Planta Med.*, 2012, **78**, 154-159 (*Chalcomoracin, PDE1 inhibitor*)

Chamaechromone C-85

[93413-00-4]

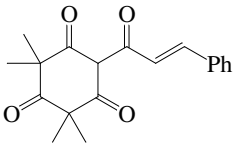


$C_{30}H_{22}O_{10}$ 542.498
Constit. of roots of *Stellera chamaejasme* and *Daphne aurantica*. Shows potent antifungal activity against *Phytophthora infestans*. Amorph. powder. $[\alpha]_D$ +80 (c, 0.5 in MeOH).

Niwa, M. *et al., Tet. Lett.*, 1984, **25**, 3735-3738 (*struct*)
Jin, C. *et al., Phytochemistry*, 1999, **50**, 505-508 (*Chamaechromone, pmr, cmr*)
Shi, G.Y. *et al., Asian J. Chem.*, 2013, **25**, 4058-4060 (*Chamaechromone, struct, antifungal activity*)

Champanone A C-86

4,4,6,6-Tetramethyl-2-(1-oxo-3-phenyl-2-propenyl)-1,3,5-cyclohexanetrione, 9CI [860797-76-8]

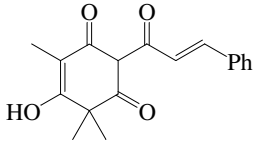


$C_{19}H_{20}O_4$ 312.365
Enolised β-diketone. Constit. of the seeds of *Campomanesia lineatifolia*. Exhibits cytotoxic and antibacterial activity. Yellow needles. Mp 92-93°. λ_{max} 204 (log ϵ 3.87); 240 (log ϵ 3.97); 356 (log ϵ 3.63) (MeOH).

Bonilla, A. *et al., Phytochemistry*, 2005, **66**, 1736-1740 (*Champanone A, struct, activity*)
Nakagawa-Goto, K. *et al., J. Med. Chem.*, 2007, **50**, 3354-3358 (*activity*)

Champanone B C-87

5-Hydroxy-3,5,5-trimethyl-2-(1-oxo-3-phenyl-2-propenyl)-4-cyclohexene-1,3-dione [861145-03-1]



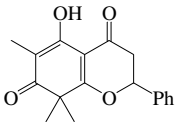
$C_{18}H_{18}O_4$ 298.338
Enolised β-triketone. Constit. of the seeds of *Campomanesia lineatifolia*. Cytotoxic. Yellow needles (CH_2Cl_2/hexane). Mp 134-135° Mp 150-151°. λ_{max} 229 (log ϵ 3.62); 310 (log ϵ 3.86); 376 (log ϵ 3.55) (MeOH).

Me ether: [426823-13-4] ***Desmosdumotin C***
$C_{19}H_{20}O_4$ 312.365
Enolised triketone. Constit. of *Desmos dumosus* and *Desmos rostrata*. Cytotoxic. Yellow needles ($CHCl_3$/MeOH). Mp 93-94°. λ_{max} 233 (ϵ 1362); 372 (ϵ 2375) (MeOH).

Wu, J.-H. *et al., Tet. Lett.*, 2002, **43**, 1391-1393 (*Desmosdumotin C, cryst struct*)
Nakagawa-Goto, K. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 3016-3019 (*Champanone B, synth, activity*)
Bonilla, A. *et al., Phytochemistry*, 2005, **66**, 1736-1740 (*Champanone B*)
Nakagawa-Goto, K. *et al., Synth. Commun.*, 2005, **35**, 1735-1739 (*Desmosdumotin C, synth*)
Nguyen, N.T. *et al., Tetrahedron*, 2009, **65**, 7171-7176 (*Desmosdumotin C*)

Champanone C C-88

5-Hydroxy-6,8,8-trimethyl-2-phenyl-2H-1-benzopyran-4,7(3H,8H)-dione, CAS [860797-75-7]

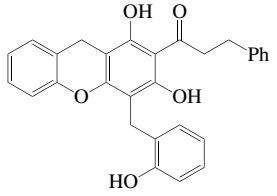


$C_{18}H_{18}O_4$ 298.338
Enolised β-diketone. Constit. of the seeds of *Campomanesia lineatifolia*. Cytotoxic to human epidermoid nasopharyngeal carcinoma KB, lung carcinoma A549 and ovarian carcinoma 1A9 cells. Yellow needles (CH_2Cl_2/hexane). Mp 147-148° Mp 159-160.5°. λ_{max} 230 (log ϵ 3.6); 316 (log ϵ 3.74); 375 (log ϵ 3.42) (MeOH).

Wu, J.-H. *et al., Bioorg. Med. Chem. Lett.*, 2003, **13**, 1813-1816 (*activity*)
Nakagawa-Goto, K. *et al., Bioorg. Med. Chem. Lett.*, 2005, **15**, 3016-3019 (*activity*)
Bonilla, A. *et al., Phytochemistry*, 2005, **66**, 1736-1740 (*Champanone C, struct, activity*)

Chamuvaritin C-89

[64675-27-0]

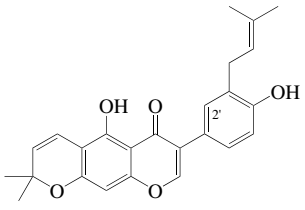


$C_{29}H_{24}O_5$ 452.506
Constit. of *Uvaria chamae* and *Uvaria angolensis*. Pale yellow cryst. Mp 152-155°. λ_{max} 285 (sh) (log ϵ 3.97); 302 (log ϵ 4.08); 340 (log ϵ 3.45) (EtOH).

Okorie, D.A. *et al., Phytochemistry*, 1977, **16**, 1591-1594 (*Uvaria chamae constit*)
Muhammad, I. *et al., J. Nat. Prod.*, 1985, **48**, 571-580 (*Uvaria angolensis constit*)

Chandalone C-90

5-Hydroxy-7-[4-hydroxy-3-(3-methyl-2-butenyl)phenyl]-2,2-dimethyl-2H,6H-benzo[1,2-b:5,4-b']dipyran-6-one, 9CI [22263-55-4]



$C_{25}H_{24}O_5$ 404.462
Constit. of the roots of *Derris scandens*, *Garcinia dulcis* and *Lupinus albus*. Exhibits antibacterial activity against MRSA SK1. Needles (MeOH). Mp 63-65°.

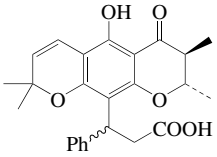
2'-Hydroxy: [107585-63-7] ***Angustone C***
$C_{25}H_{24}O_6$ 420.461
Constit. of *Lupinus albus* and root of *Lupinus angustifolius*. Acts as an insect feeding deterrent. Cryst. (Et_2O/petrol). Sol. MeOH, $CHCl_3$; poorly sol. H_2O, hexane. Mp 178-180°. λ_{max} 226 (ϵ 22909); 288 (ϵ 97723); 342 (ϵ 3631) (EtOH).

6'-Methoxy, 2'-hydroxy: [72578-99-5] ***Cajaisoflavone***
$C_{26}H_{26}O_7$ 450.487
Constit. of root bark of *Cajanus cajan*. Orange semisolid.

Falshaw, C.P. *et al., JCS(C)*, 1969, 374-382 (*Chandalone*)
Bhanumati, S. *et al., Phytochemistry*, 1979, **18**, 1254 (*Cajaisoflavone*)
Lane, G.A. *et al., J. Chem. Ecol.*, 1987, **13**, 771-783 (*Angustone C, activity*)
Lane, G.A. *et al., Phytochemistry*, 1987, **26**, 295-300 (*Angustone C, struct*)
Tahara, S. *et al., Phytochemistry*, 1989, **28**, 901-911 (*Angustone C*)
Tahara, S. *et al., Phytochemistry*, 1991, **30**, 1683-1689 (*Chandalone*)
Mahabusarakam, S.D. *et al., Phytochemistry*, 2004, **65**, 1185-1191 (*Derris scandens constit, activity*)
Deachathai, S. *et al., Phytochemistry*, 2005, **66**, 2368-2375 (*Garcinia dulcis constit*)

Chapelieric acid C-91

7,8-Dihydro-5-hydroxy-2,2,7,8-tetramethyl-6-oxo-β-phenyl-2H,6H-benzo[1,2-b:5,4-b']dipyran-10-propanoic acid, CAS [34336-13-5]



Realitve Configuration

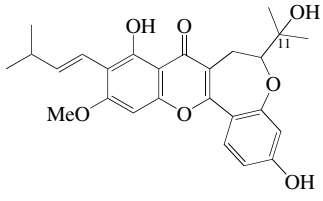
$C_{25}H_{26}O_6$ 422.477
Constit. of *Calophyllum chapelieri*, *Calophyllum calaba*, *Calophyllum membranaceum* and *Calophyllum polyanthum*. Oil (as Me ester). $[\alpha]_D$-165 (c, 2 in $CHCl_3$) (Me ester).

Diastereoisomer: [90866-13-0] ***Isochapelieric acid***. cis-*Chapelieric acid*
$C_{25}H_{26}O_6$ 422.477
Constit. of *Calophyllum calaba*. Oil (as Me ester). $[\alpha]_D$-113.5 (c, 2 in $CHCl_3$) (Me ester). Has *cis*-config. of methyl groups.

Guerreiro, E. *et al., Phytochemistry*, 1971, **10**, 2139-2145 (*Chapelieric acid, struct*)
Gunatilaka, A.A.L. *et al., Phytochemistry*, 1984, **23**, 323-328 (*Calophyllum calaba constits, struct*)

Chaplashin C-92

6,7-Dihydro-3,9-dihydroxy-6-(1-hydroxy-1-methylethyl)-11-methoxy-10-(3-methyl-1-butenyl)-8H-1-benzopyrano[3,2-d][1]benzoxepin-8-one, 9CI. ***Artonin S*** [40413-47-6]



$C_{26}H_{28}O_7$ 452.503

Stereochemical identity of Chaplashin and Artonin S not demonstrated. Abs. config. not determined; uncertain whether the opt. rotns. reported represent enantiomers. Reported values refer to different isolations of Chaplashin. Constit. of *Artocarpus chaplasha*, *Artocarpus heterophylla*, *Artocarpus altilis* and *Artocarpus nitidus*. Yellow needles (MeOH or EtOAc). Mp 250° (200-202°, 236-238°). $[\alpha]_D^{25}$ +10 (c, 0.2 in MeOH). $[\alpha]_D^{25}$ +10 (c, 0.2 in MeOH). $[\alpha]_D^{27}$-4.04 (c, 0.02 in MeOH).

Tri-Ac:
Needles (MeOH). Mp 163-165°. $[\alpha]_D^{25}$ +6.8 ($CHCl_3$).

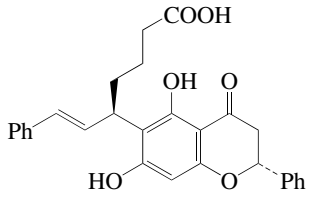
11-Deoxy, 11,12-didehydro: [1147749-03-8] ***Artoindonesianin E$_1$***
$C_{26}H_{26}O_6$ 434.488
Constit. of the wood of *Artocarpus elasticus*. Cytotoxic. Pale yellow solid. λ_{max} 280 (log ϵ 4.4); 328 (log ϵ 4.01) (MeOH). λ_{max} 277 (log ϵ 4.4); 368 (log ϵ 3.91) (MeOH/NaOH).

11-Hydroperoxide: [223386-74-1] ***Artoindonesianin B***
$C_{26}H_{28}O_8$ 468.502
Constit. of *Artocarpus champeden*. Yellow powder. Mp 165-166°. $[\alpha]_D^{22}$ + 8.6 (c, 0.18 in MeOH). λ_{max} 252 (log ϵ 3.87); 294 (log ϵ 4.26); 346 (log ϵ 4.26) (MeOH).

Rao, A.V.R. *et al., Indian J. Chem.*, 1972, **10**, 905-907 (*Chaplashin*)
Rao, A.V.R. *et al., Indian J. Chem.*, 1972, **10**, 989-1001 (*ms*)
Aida, M. *et al., Heterocycles*, 1994, **39**, 847-858 (*Artonin S*)
Hakim, E.H. *et al., J. Nat. Prod.*, 1999, **62**, 613-615 (*Artoindonesianin B*)
Boonphong, S. *et al., Chiang Mai J. Sci.*, 2007, **34**, 339-344 (*Chaplashin*)
Musthapa, I. *et al., Arch. Pharmacal Res.*, 2009, **32**, 191-194 (*Artoindonesianin E$_1$*)
Zhao, T. *et al., Chem. Biodiversity*, 2009, **6**, 2209-2216 (*Artocarpus nitidus constit*)

Chartaceone A C-93

[1345975-60-1]



(2*R*,5"*R*)-*form*

$C_{28}H_{26}O_6$ 458.51

Isol. as racemic mixt. of diastereomers and sepd. by chiral hplc into the 4 stereoisomers. λ_{max} 255 (log ϵ 4.36); 294 (log ϵ 4.26); 341 (sh) (log ϵ 3.6) (MeOH).

(2*R*,5″*R*)-*form* [1345975-66-7]
Chartaceone A$_1$.
Constit. of the bark of *Cryptocarya chartacea*. Exhibits moderate inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. $[\alpha]_D^{25}$ +82 (c, 1.0 in $CHCl_3$).

(2*R*,5″*S*)-*form* [1345975-67-8]
Chartaceone A$_2$.
Constit. of the bark of *Cryptocarya chartacea*. Exhibits moderate inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. $[\alpha]_D^{25}$-56 (c, 0.5 in $CHCl_3$).

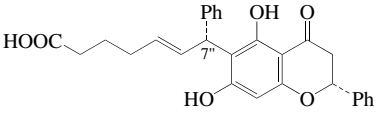
(2*S*,5″*R*)-*form* [1345975-69-0]
Chartaceone A$_3$.
Constit. of the bark of *Cryptocarya chartacea*. Exhibits moderate inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. $[\alpha]_D^{25}$ +56 (c, 0.5 in $CHCl_3$).

(2*S*,5″*S*)-*form* [1345975-71-4]
Chartaceone A$_4$.
Constit. of the bark of *Cryptocarya chartacea*. Exhibits moderate inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. $[\alpha]_D^{25}$-88 (c, 1.0 in $CHCl_3$).

Allard, P.-M. *et al., J. Nat. Prod.*, 2011, **74**, 2446-2453 (*Chartaceones A,A$_1$-A$_4$*)

Chartaceone B C-94

[1345975-61-2]



(2*R*,7"*R**)-(*E*)-*form*

$C_{28}H_{26}O_6$ 458.51

Isol. as racemic mixt. of diastereomers sepd. by chiral hplc into 4 stereoisomers. C-7″ configs. not determined. λ_{max} 294 (log ϵ 4.21); 341 (sh) (log ϵ 3.54) (MeOH).

(2*R*,7″*R)-(*E*)-*form*** [1345975-73-6]
Chartaceone B$_1$.
Constit. of the bark of *Cryptocarya chartacea*. Exhibits moderate inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. $[\alpha]_D^{25}$-31 (c, 0.5 in $CHCl_3$).

(2*R*,7″*S)-(*E*)-*form*** [1345975-75-8]
Chartaceone B$_2$.
Constit. of the bark of *Cryptocarya chartacea*. Exhibits moderate inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. $[\alpha]_D^{25}$ +45 (c, 0.5 in $CHCl_3$).

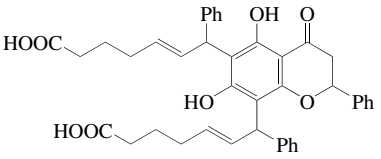
(2*S*,7″*R)-(*E*)-*form*** [1345975-77-0]
Chartaceone B$_3$.
Constit. of the bark of *Cryptocarya chartacea*. Exhibits moderate inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. $[\alpha]_D^{25}$-48 (c, 0.5 in $CHCl_3$).

(2*S*,7″*S)-(*E*)-*form*** [1345975-79-2]
Chartaceone B$_4$.
Constit. of the bark of *Cryptocarya chartacea*. Exhibits moderate inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. $[\alpha]_D^{25}$ +35 (c, 0.5 in $CHCl_3$).

Allard, P.-M. *et al., J. Nat. Prod.*, 2011, **74**, 2446-2453 (*Chartaceones B,B$_1$-B$_4$*)

Chartaceone C C-95

[1345975-62-3]

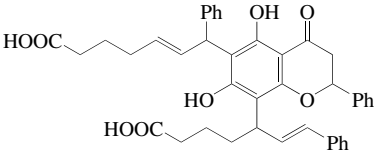


$C_{41}H_{40}O_8$ 660.762
Constit. of the bark of *Cryptocarya chartacea*. Exhibits significant inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. Amorph. yellow-orange solid. Racemic. λ_{max} 296 (log ϵ 3.97); 342 (sh) (log ϵ 3.6) (MeOH).

Allard, P.-M. *et al., J. Nat. Prod.*, 2011, **74**, 2446-2453 (*Chartaceone C*)

Chartaceone D C-96

[1345975-63-4]

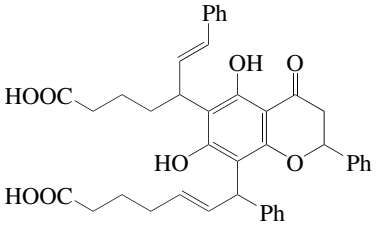


$C_{41}H_{40}O_8$ 660.762
Constit. of the bark of *Cryptocarya chartacea*. Exhibits significant inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. Amorph. brownish solid. Racemic. λ_{max} 294 (log ϵ 4.07); 341 (sh) (log ϵ 3.52) (MeOH).

Allard, P.-M. *et al., J. Nat. Prod.*, 2011, **74**, 2446-2453 (*Chartaceone D, struct, activity*)

Chartaceone E C-97

[1345975-64-5]



$C_{41}H_{40}O_8$ 660.762
Constit. of the bark of *Cryptocarya chartacea*. Exhibits significant inhibitory activity against dengue virus NS5 RNA-dependent RNA polymerase. Amorph. brownish solid. Racemic. λ_{max} 254 (log ϵ 4.18); 295 (log ϵ 4.01); 342 (sh) (log ϵ 3.51) (MeOH).