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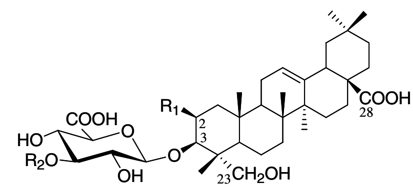
Reports on Structure Elucidation

Contents

TERPENOIDS

Abdulmagid Alabdul Magid, Laurence Voutquenne-Nazabadioko*, Isabelle Renimel, Dominique Harakat, Christian Moretti and Catherine Lavaud

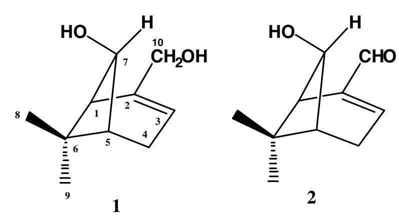
Five triterpenoid saponins (**3**–**7**), were isolated from the stem bark of *Caryocar villosum* along with two known compounds. Their structures were established by spectroscopic methods. The cytotoxic activity of saponins **2** and **3** was evaluated *in vitro* against the human keratinocyte cells.



2 R_1 = H, R_2 = β-D-Gal-
3 R_1 = H, R_2 = α-L-Rha-(1 > 3)-β-D-Gal-
4 R_1 = OH, R_2 = α-L-Rha-(1 > 3)-β-D-Gal-

Ahmed A. Mahmoud* and Ahmed A. Ahmed

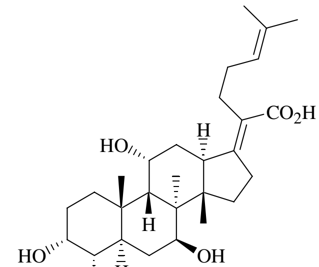
Two α-pinene-type monoterpenes, 7-hydroxymyrtenol (**1**) and 7-hydroxymyrtenal (**2**), a inositol derivative, (+)-quebrachitol (**3**) and two *p*-menthene triols (**4** and **5**) were isolated from the aerial parts of *Artemisia suksdorfii*. Their structures were established by analysis of spectroscopic data (IR, HR-MS, ^{1}H and ^{13}C NMR), including high-field 2D NMR techniques (^{1}H–^{1}H COSY, HMQC, HMBC and NOE), and X-ray analysis for **3**.



1 **2**

Liam Evans, John N. Hedger, David Brayford, Michael Stavri, Eileen Smith, Gemma O'Donnell, Alexander I. Gray, Gareth W. Griffith and Simon Gibbons*

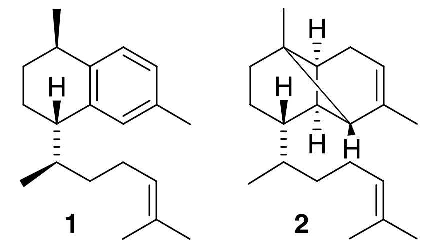
Bioautography-led isolation of an extract of the fermentation of the mitosporic fungus *Acremonium crotocinigenum* resulted in the characterisation of the fusidane triterpene related to fusidic acid, **1**, as the major anti-staphylococcal natural product. Against efflux strains, **1** had MIC values of 16 μg/ml.



(**1**)

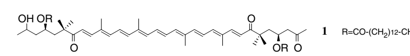
Sophia A. Kolesnikova, Anatoly I. Kalinovsky, Sergei N. Fedorov, Larisa K. Shubina and Valentin A. Stonik*

Two diterpenes, ent-erogorgiaene (**1**) and (+)-1,5-cyclo-5,8,9,10-tetrahydroerogorgiaene (**2**), have been isolated from the brown alga *Dictyota dichotoma*. Their structures were elucidated by analysis of 1D and 2D NMR, mass spectra and optical rotation data.



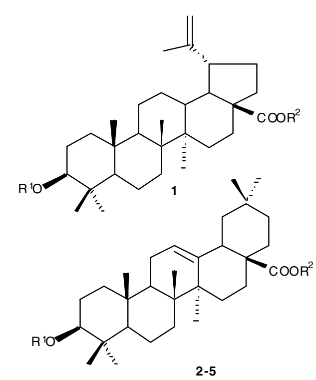
Takashi Maoka*, Yasuhiro Fujiwara, Keiji Hashimoto and Naoshige Akimoto

Three 5-hydroxy-*seco*-carotenoids (**1**–**3**) were isolated from seeds of *Pittosporum tobira*. Their structures were determined by analysis of UV–vis, IR, FAB MS and NMR spectroscopic data.



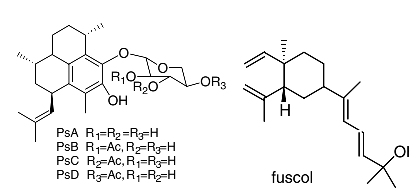
Azefack Léon Tapondjou, Tomofumi Miyamoto and Marie-Aleth Lacaille-Dubois*

Five 3-*O*-glucuronide triterpene saponins (**1**–**5**) were isolated from the stem bark of *Bersama engleriana* Gurke along with two known saponins, and one major C-glycoside xanthone, mangiferin. Structure elucidation resulted from spectroscopic methods.



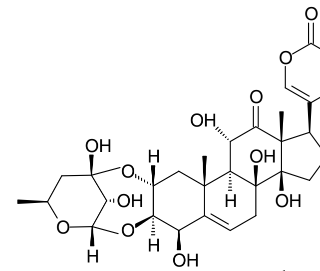
Nealie C. Newberger, Llanie K. Ranzer, Jennifer M. Boehnlein and Russell G. Kerr*

This report describes a series of experiments designed to determine if terpene biosynthesis is inducible in two families of marine terpenes, pseudopterosins from the gorgonian coral *Pseudopterogorgia elisabethae* and fuscol from *Eunicea fusca*.



Neil R. Crouch, Karen du Toit, Dulcie A. Mulholland* and Siegfried E. Drewes

The bufadienolides, 16β-acetoxy-3β, 14β-dihydroxy-19-formyl-bufa-4,20,22-trienolide (16β-acetoxy-berscillogenin) and 4β,8β,11α,14β-tetrahydroxybufa-5,20,22-trienolide-12-one, 2α,3β-*O*-glycoside (lydenburgenin) (**1**) were isolated from the poisonous geophyte *Urginea lydenburgensis*.

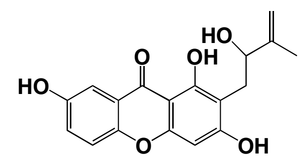


1

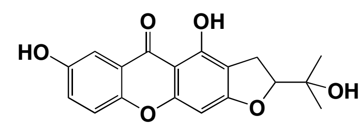
PHENOLICS

Naonobu Tanaka and Yoshihisa Takaishi*

Six xanthones, 1,3,7-trihydroxy-2-(2-hydroxy-3-methyl-3-butenyl)-xanthone (**1**), 1,7-dihydroxy-2,3-[2″-(1-hydroxy-1-methylethyl)-dihydrofurano]-xanthone (**2**), 1,3,7-trihydroxy-5-methoxyxanthone (**3**), 1,7-dihydroxy-5,6-dimethoxyxanthone (**4**), 4,5-dihydroxy-2,3-dimethoxyxanthone (**5**), 1,3-dihydroxy-2,4-dimethoxyxanthone (**6**) and 23 known xanthones were isolated from the leaves and stems of *Hypericum chinense*. Their structures were established based on spectroscopic studies.



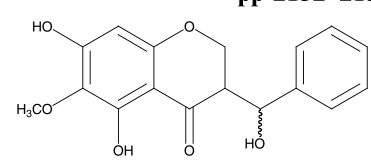
1



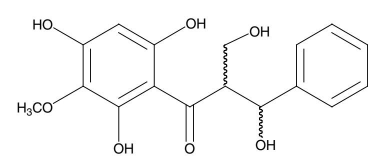
2

Silvia N. López, Manuel Gonzalez Sierra, Susana J. Gattuso, Ricardo L. Furlán and Susana A. Zacchino*

A homoisoflavanone (**1**) and a dihydrochalcone (**2**) were isolated from dry leaves of *Polygonum ferrugineum* (Polygonaceae), along with five known chalcones and flavanones. Structures were assigned on the basis of 1 and 2D NMR spectral studies. This is the first report on the occurrence of an homoisoflavanone in *Polygonum* genus. In addition, it possess distinctive features respective to other homoisoflavanones previously isolated from natural sources and could be an important finding from the point of view of chemosystematic of the genus.



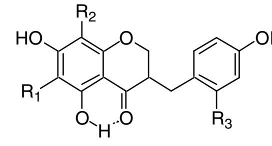
1



2

Anh-Tho Nguyen*, Jeanine Fontaine, Hugues Malonne and Pierre Duez

Four homoisoflavanones along with six other known compounds were isolated from cytotoxic extracts of the rhizome of *Disporopsis aspera*. Structures of **1**–**2** were established on the basis of spectral evidence. The isolated homoisflavanones inhibit the proliferation of several cancer human cell lines *i.e.* HCT15, T24S, MCF7, Bowes, A549 and K562. Possible biosynthesis routes for the homoisoflavonoids are discussed.



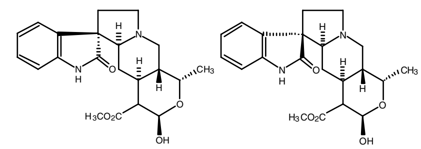
	R_1	R_2	R_3
1	H	H	OH
2	CH_3	H	H

ALKALOIDS

Heteroyohimbinoid type oxindole alkaloids from *Mitragyna parvifolia* **pp 2164–2169**

Richa Pandey, Subhash C. Singh and Madan M. Gupta*

The leaves of the plant *Mitragyna parvifolia* have afforded two alkaloids, 16,17-dihydro-17β-hydroxy isomitraphylline (**1**) and 16,17-dihydro-17β-hydroxy mitraphylline (**2**), together with two known alkaloids, isomitraphylline (**3**) and mitraphylline (**4**). The structures of **1** and **2** were elucidated using 1D and 2D NMR spectral methods, including ^{1}H-^{1}HCOSY, DEPT, HSQC, and HMBC. Mitraphylline was the main alkaloid constituent.

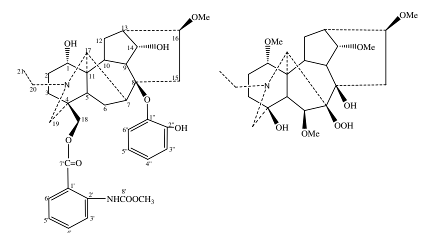


1 2

Norditerpene alkaloids from *Delphinium linearilobum* and antioxidant activity **pp 2170–2175**

Ufuk Kolak*, Mehmet Öztürk, Fevzi Özgökçe and Ayhan Ulubelen

From the roots of *Delphinium linearilobum* (Trautv.) N. Busch two new norditerpene and six known alkaloids were isolated. Antioxidant activity was performed by DPPH and metal chelating activity assays.



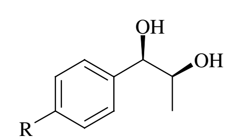
Linearilobin Linearilin

GENERAL CHEMISTRY

GC–MS analysis of the essential oils, and the isolation of phenylpropanoid derivatives from the aerial parts of *Pimpinella aurea* **pp 2176–2181**

Abbas Delazar, Fahimeh Biglari, Solmaz Esnaashari, Hossein Nazemiyeh, Amir-Hossein Talebpour, Lutfun Nahar and Satyajit D. Sarker*

A combination of VLC and PTLC of the CH_2Cl_2 extract of the aerial parts of the Iranian plant *Pimpinella aurea* afforded two phenylpropanoids, *erythro*-1′-(4-methoxyphenyl)-propan-1′,2′-diol (**1**) and *erythro*-1′-[4-(*sec*-butyl)-phenyl]-propan-1′,2′-diol (**2**), the latter being a natural product. The antioxidant properties of these compounds were assessed by the DPPH assay. The GC–MS analysis of the essential oils of *P. aurea* provided a chemical profile that was significantly different from the previously published reports.

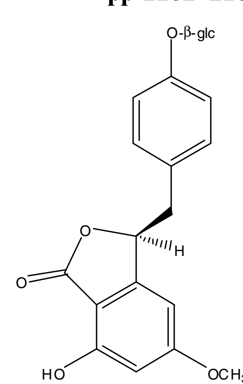


1 R = OMe
2 R = *Sec*-butyl

Stilbenoids from *Tragopogon orientalis* **pp 2182–2188**

Christian Zidorn, Sandra Grass, Ernst P. Ellmerer, Karl-Hans Ongania and Hermann Stuppner*

Tragopogon orientalis L. (Asteraceae, Cichorieae) yielded the natural products 6″-*O*-(7,8-dihydrocaffeoyl)-α,β-dihydrorhaponticin, 3′-*O*-methyl-α,β-dihydrorhaponticin, and (*S*)-3-(4-β-glucopyranosyloxybenzyl)-7-hydroxy-5-methoxyphtalide as well as known compounds α,β-dihydrorhaponticin, 3-(4-methoxybenzyl)-5,7-dimethoxyphthalide, *p*-dihydrocoumaric acid methyl ester, and 1-hydroxypinoresinol-1-*O*-β-glucopyranoside. The structures were established by HR mass spectrometry, extensive 1D and 2D NMR spectroscopy, and CD spectroscopy. The radical scavenging activities of the major compounds were measured using the DPPH assay. The chemosystematic impact of the occurrence of stilbene derivatives in *T. orientalis* is discussed.



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* Corresponding author

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