

Phytochemistry Vol. 67, No. 10, 2006

Reports on Structure Elucidation

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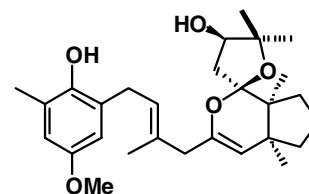
TERPENOIDS

Tetraprenyltoluquinols from the brown alga *Cystophora fibrosa*

pp 944–955

Damian W. Laird, Ian A. van Almena*

Enantiomeric 4'-methoxyamentol, a tetracyclic tetraprenyltoluquinol, has been isolated from the South African marine brown alga *Cystophora fibrosa* as well as another five amentol derivatives with a further five stereoisomers. The stereochemistry of these compounds is discussed in relation to the results of a series of molecular modelling experiments.

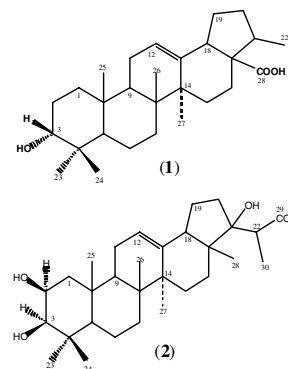


Crotalic and emarginellic acids: Two triterpenes from *Crotalaria emarginella* and anti-inflammatory and anti-hepatotoxic activity of crotalic acid

pp 956–964

Bahar Ahmed*, Tawfeq A. Al-Howiriny, Jaber S. Mossa

Two triterpenes 3 α -hydroxy-arbor-12-ene-28-carboxylic acid named as crotalic acid (**1**), and 2 β ,3 β ,21-trihydroxy-arbor-12-ene-29-carboxylic acid, named as emarginellic acid (**2**) were obtained from *Crotalaria emarginella*. The crotalic acid **1** exhibited 53% anti-inflammatory activity with respect oxyphenyl butazone (69%), and 30% anti-hepatotoxic activity with respect silybon-70 (57%).

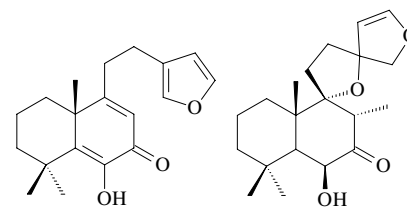


Labdane diterpenes from *Leonurus japonicus* leaves

pp 965–970

Román R. Romero-González, Jorge L. Ávila-Núñez, Lianne Aubert, Miguel E. Alonso-Amelot*

Furanoid labdanes, leojaponin, *epi*-preleoheterin and *iso*-preleoheterin, and a known fourth, preleoheterin, were isolated from the leaves of *Leonurus japonicus* collected in the Andean region of Venezuela.



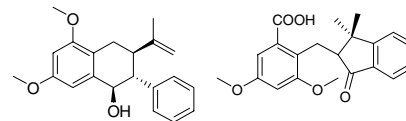
PHENOLICS

Structures of bioactive carexanes from the roots of *Carex distachya* Desf

pp 971–977

Antonio Fiorentino*, Brigida D'Abrosca, Severina Pacifico, Angela Natale, Pietro Monaco

Metabolites, named carexanes I–L, have been isolated from the roots of *Carex distachya* Desf. The structures have been characterized on the basis of their spectroscopic properties.

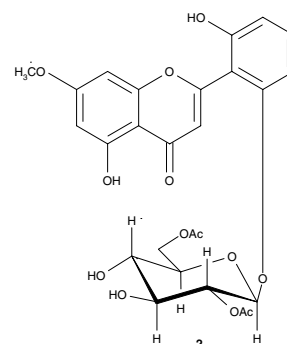


Acylated 5,7,2',6'-oxygenated flavone glycosides from *Andrographis alata*

pp 978–983

Biswanath Das*, R. Ramu, Yerra Koteswara Rao, M. Ravinder Reddy, H. Harish, V. Saidi Reddy, K.V.S. Ramakrishna

Five acylated 5,7,2',6'-oxygenated flavone glycosides were isolated from *Andrographis alata*. The structures of the compounds were elucidated from spectral and chemical evidence.

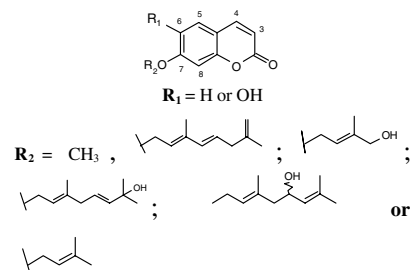


Antioxidant activity of coumarins and flavonols from the resinous exudate of *Haplopappus multifolius*

pp 984–987

René Torres*, Francesca Faini, Brenda Modak, Francisco Urbina, Cecilia Labbé, Juan Guerrero

Eight coumarins are the main constituents (84% w/w) of resinous exudates produced on stems and leaves of *Haplopappus multifolius* growing under oxidative stress conditions. Results show that a high concentration of phenolic coumarins and the presence of quercetin and rhamnetin could account for the protection of the plant against oxidative stress.

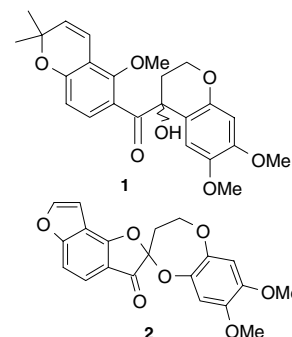


Two unusual rotenoid derivatives, 7a-O-methyl-12a-hydroxydeguelol and spiro-13-homo-13-oxaelliptone, from the seeds of *Derris trifoliata*

pp 988–991

Abiy Yenesew*, John T. Kiplagat, Solomon Derese, Jacob O. Midiwo, Jacques M. Kabaru, Matthias Heydenreich, Martin G. Peter

From the seeds of *Derris trifoliata* two modified rotenoid derivatives (**1** and **2**) were isolated and characterised. The structures were determined on the basis of spectroscopic evidence.



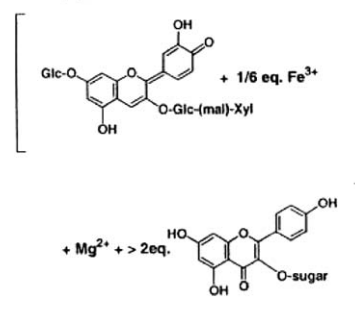
Ferric ions involved in the flower color development of the Himalayan blue poppy, *Meconopsis grandis*

pp 992–998

Kumi Yoshida*, Sayoko Kitahara, Daisuke Ito, Tadao Kondo

The underlying reasons for petal color development in the Himalayan blue poppy, *Meconopsis grandis*, was investigated and established.

blue pigment:

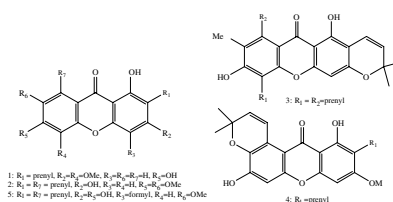


Tetraoxygenated xanthenes from the fruits of *Garcinia cowa*

pp 999–1004

Kanda Panthong*, Wipapan Pongcharoen, Souwalak Phongpaichit, Walter C. Taylor

Tetraoxygenated xanthenes: cowaxanthenes A–E were isolated from the crude hexane extract of the fruits of *Garcinia cowa*, and the antibacterial activity of some of them investigated.



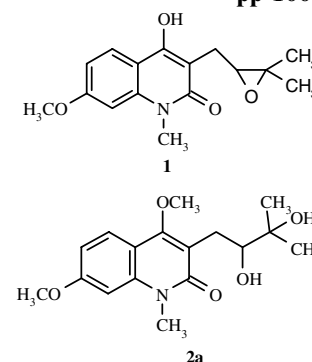
ALKALOIDS

Alkaloids from *Toddalia aculeata*

pp 1005–1010

Subhash C. Jain*, Mukesh K. Pandey, Ravi K. Upadhyay, Rohtash Kumar, Geeta Hundal, Maninder S. Hundal

Two alkaloids *N*-methyl-4-hydroxy-7-methoxy-3-(2,3-epoxy-3-methylbutyl)-1*H*-quinolin-2-one (**1**) and 3-(2,3-dihydroxy-3-methylbutyl)-4,7-dimethoxy-1-methyl-1*H*-quinolin-2-one (**2a**) have been isolated from CH₂Cl₂:methanol (1:1) and methanol extracts of leaves and stems of *Toddalia aculeata*. Their structures along with that of 15 other compounds, of which three are isolated for the first time from genus *Toddalia*, were established by their detailed spectral studies including 2D NMR viz. ¹H–¹H COSY, ¹H–¹³C COSY, and HMBC.



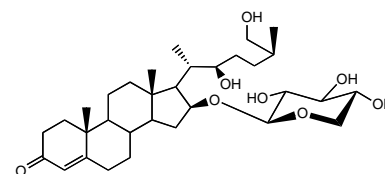
GENERAL CHEMISTRY

Steroidal saponins from the aerial parts of *Tribulus alatus* Del.

pp 1011–1018

Abeer Temraz, Omayma D. El Gindi, Hazem A. Kadry, Nunziatina De Tommasi, Alessandra Braca*

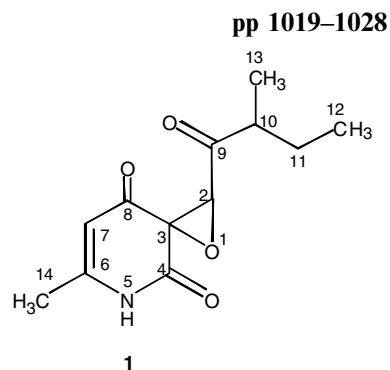
Six steroidal glycosides (**1**–**6**) were isolated from the aerial parts of *Tribulus alatus* Del. (Zygophyllaceae), together with one known cholestane, one spirostane, and six flavonol glycosides. Among them, **1** and **2** possess a furostane-type aglycone, **3** and **6** a cholestane structure, and **4** and **5** a spirostane skeleton. Their structural elucidation was accomplished by extensive spectroscopic methods including 1D (¹H, ¹³C, ¹³C DEPT, TOCSY, ROESY) and 2D NMR experiments (DQF-COSY, HSQC, HMBC) as well as ESI-MS analysis.



Chemical and biological characterisation of sapinopyridione, a phytotoxic 3,3,6-trisubstituted-2,4-pyridione produced by *Sphaeropsis sapinea*, a toxigenic pathogen of native and exotic conifers, and its derivatives

Antonio Evidente*, Michele Fiore, Giovanni Bruno, Lorenzo Sparapano, Andrea Motta

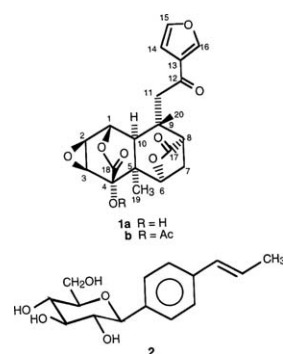
We report the structure of sapinopyridione (**1**), a phytotoxin produced by *Sphaeropsis sapinea* causing dieback, canker and shoot blight, on cypress trees. The structure–activity relationship was also investigated through the bioassays of three key derivatives.



Clerodanes and other constituents of *Cleidion spiciflorum*

Waree Naengchomnong, Paulo M. Pinho, Anake Kijjoa, Pichan Sawangwong, Maria José Gonzalez, Artur M.S. Silva, Graham Eaton, Werner Herz*

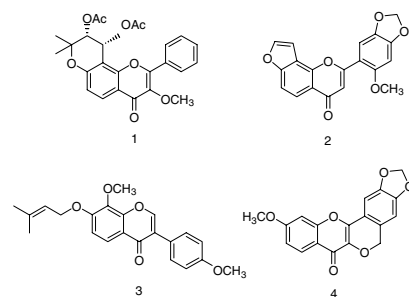
The isolation and structure determination of a clerodane, spiciflorin, the glucoside of *p*-anol and a number of known compounds from the roots of *Cleidion spiciflorum* are reported.



Antimycobacterial flavonoids from *Derris indica*

Sorwaporn Koysoomboon, Ian van Altena, Shigeru Kato, Kan Chantrapromma*

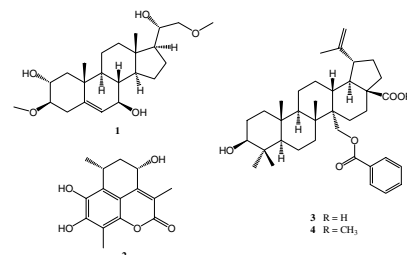
Flavonoids (**1–4**) were isolated from the stems and roots of the mangrove plant *Derris indica*. All compounds except **2** exhibited antimycobacterial activity.



Pregnane, coumarin and lupane derivatives and cytotoxic constituents from *Helicteres angustifolia*

Wenliang Chen, Weidong Tang, Liguang Lou, Weimin Zhao*

Four natural products possessing pregnane, coumarin and lupane skeletons, along with 24 known compounds were isolated from the roots and aerial parts of the anti-tumor medicinal plant *Helicteres angustifolia*. Among these, two cucurbitacin derivatives exhibited significant inhibitory activity against the growth of both hepatocellular carcinoma BEL-7402 cells and malignant melanoma SK-MEL-28 cells.



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