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Global phytochemistry: The Turkish frame

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Makust Coşkun and A. Mine Gençler Özkan

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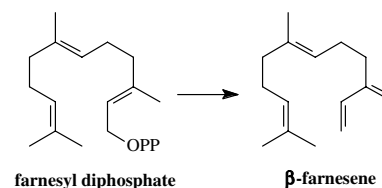
PROTEIN BIOCHEMISTRY

Expression, purification and characterization of recombinant (*E*)- $\beta$ -farnesene synthase from *Artemisia annua*

pp 961–967

Sarah Picaud, Maria Brodelius and Peter E. Brodelius\*

A cDNA clone encoding the sesquiterpene synthase (*E*)- $\beta$ -farnesene synthase has been isolated from *Artemisia annua* L. The recombinant enzyme produced in *Escherichia coli* has been characterized.

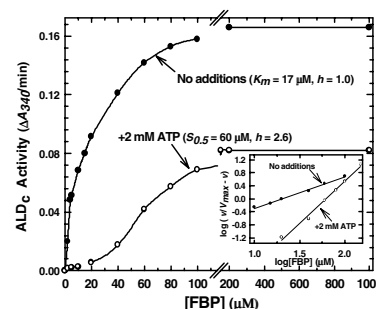


Purification and characterization of an allosteric fructose-1,6-bisphosphate aldolase from germinating mung beans (*Vigna radiata*)

pp 968–974

Ashish Lal, William C. Plaxton and Arvind M. Kayastha\*

Potent allosteric inhibition of cytosolic aldolase by ATP is suggested to help balance cellular ATP demands with the control of cytosolic glycolysis and respiration in germinated mung beans.

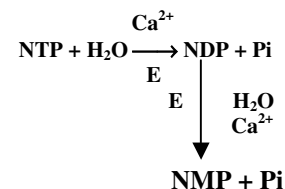


Potato tuber isoapyrases: Substrate specificity, affinity labeling, and proteolytic susceptibility

pp 975–982

A.M. Kettlun, V. Espinosa, L. García and M.A. Valenzuela\*

Potato isoapyrases from Desirée (low ATPase/ADPase ratio) and Pimpernel (high ATPase/ADPase ratio) show broad specificities towards dNTP and fluorescent nucleotides. Pimpernel enzyme shows higher  $k_{cat}$  towards all triphosphate derivatives and lower proteolytic susceptibility as compared with Desirée. Unlike animal apyrases, labeling with azido-nucleotides and FSBA was not achieved with these plant enzymes.





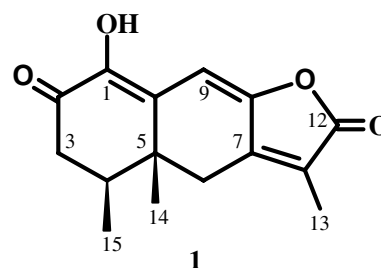
## ECOLOGICAL BIOCHEMISTRY

### Phytotoxins from the fungus *Malbranchea aurantiaca*

pp 1012–1016

Sergio Martínez-Luis, María C. González, Miguel Ulloa and Rachel Mata\*

Bioassay-directed fractionation of an ethyl acetate extract of the micelial and broth combined extracts of *Malbranchea aurantiaca* led to the isolation of two phytotoxins, namely, 1-hydroxy-2-oxoeremophil-1(10),7(11),8(9)-trien-12(8)-olide (**1**) and penicillic acid (**2**). The structure of compound was established by spectroscopic and X-ray analyses. Metabolites **1** and **2** caused significant inhibition of radicle growth of *Amaranthus hypochondriacus* with IC<sub>50</sub> values of 170.9 and 65.7  $\mu$ M, respectively. In addition, **1** inhibited the activation of the calmodulin-dependent enzyme cAMP phosphodiesterase.



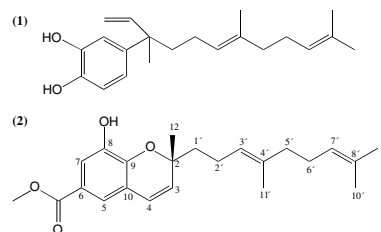
## BIOACTIVE PRODUCTS

### Inhibitory effects of *Piper umbellatum* and *Piper peltatum* extracts towards myotoxic phospholipases A<sub>2</sub> from *Bothrops* snake venoms: Isolation of 4-nerolidylcatechol as active principle

pp 1017–1025

Vitelbina Núñez, Víctor Castro, Renato Murillo, Luis A. Ponce-Soto, Irmgard Merfort and Bruno Lomonte\*

*Piper umbellatum* and *Piper peltatum*, plants utilized in traditional medicine, demonstrated moderate inhibitory ability towards enzymatic and toxic activities of purified phospholipase A<sub>2</sub> myotoxins of *Bothrops* snake venoms. Two compounds were isolated: compound **1** (4-nerolidylcatechol) inhibited catalytic and toxic activities of these proteins; while compound **2**, a newly described molecule, was not inhibitory.



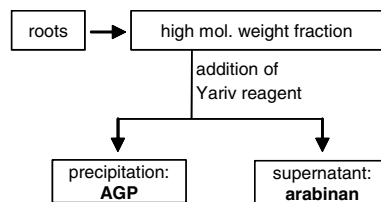
## CHEMISTRY

### High molecular weight constituents from roots of *Echinacea pallida*: An arabinogalactan-protein and an arabinan

pp 1026–1032

Sebastian Thude\* and Birgit Classen

Structural investigations of an arabinogalactan-protein (AGP) and an arabinan, isolated from roots of *Echinacea pallida* (Nutt.) Nutt., are reported.

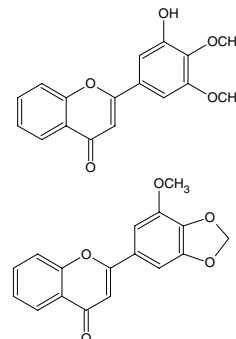


### Lipophilic flavones of *Primula veris* L. from field cultivation and in vitro cultures

pp 1033–1039

Jaromir Budzianowski\*, Maria Morozowska and Maria Wesołowska

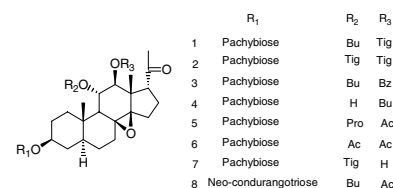
Ten lipophilic flavones, including the new natural products 3'-hydroxy-4',5'-dimethoxyflavone, 3'-methoxy-4',5'-methylenedioxyflavone, 2',5'-dimethoxyflavone and 3',4'-dimethoxyflavone, were found in the leaves of *Primula veris* L. (Primulaceae).



**Marsdenosides A–H, polyoxypregnane glycosides from *Marsdenia tenacissima*****pp 1040–1051**

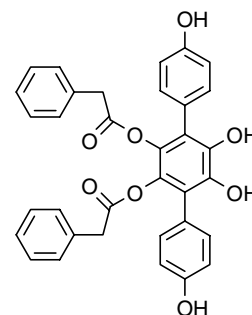
Jun Deng, Zhixin Liao and Daofeng Chen\*

From the  $\text{CHCl}_3$  extract of the stem of *Marsdenia tenacissima*, eight polyoxypregnane glycosides were isolated. The structures were elucidated by spectroscopic analysis and chemical evidence.

**Terrestrins A–G: *p*-Terphenyl derivatives from the inedible mushroom *Thelephora terrestris*****pp 1052–1059**

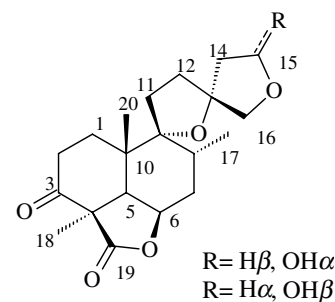
Niko Radulović, Dang Ngoc Quang, Toshihiro Hashimoto, Makiko Nukada and Yoshinori Asakawa\*

Seven *p*-terphenyl derivatives named terrestrins A–G together with three known ganbajunin B, thelephantins F and H, were isolated from the methanol extract of fruiting bodies of the Japanese inedible mushroom *Thelephora terrestris* (Thelephoraceae).

**Labdane diterpenes from *Marrubium velutinum* and *Marrubium cylleneum*****pp 1060–1066**

Anastasia Karioti, Jörg Heilmann and Helen Skaltsa\*

From the aerial parts of *Marrubium velutinum* and *Marrubium cylleneum* seven labdane diterpenes have been isolated together with five known diterpenes and four known flavones. The structures of the isolated compounds were established by means of NMR and MS spectral analyses.

**Characterization of cell wall polysaccharides from the medicinal plant *Panax notoginseng*****pp 1067–1076**

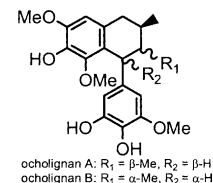
Ying Zhu, Filomena Pettolino, Shaio-Lim Mau and Antony Bacic\*

The alcohol insoluble residue of *P. notoginseng* root (pictured) was fractionated and the polysaccharide and protein composition of the root cell walls was deduced by compositional analysis of the fractions.



**Cyclolignans from *Scyphocephalum ochocoa* via high-throughput natural product chemistry methods****pp 1077–1082**Jin-Feng Hu\*, Eliane Garo, Hye-Dong Yoo, Peadar A. Cremin,  
Matt G. Goering, Mark O'Neil-Johnson and Gary R. Eldridge

Two 2,7'-cyclolignans, ocholignans A and B, were obtained as mass-limited samples from *Scyphocephalum ochocoa* via high-throughput natural product chemistry methods. The rapid structure elucidation of each compound was primarily facilitated by NMR data acquisition using a capillary-scale NMR probe. Ocholignan A was found to possess significant in vitro antibacterial activity.

**OTHER CONTENTS****Announcement: The Phytochemical Society of Europe****pp I–II****Author Index****p III****Guide for Authors****pp IV–V**

\* Corresponding author

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