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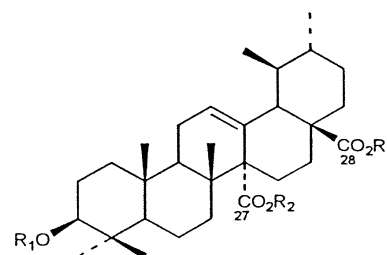
REVIEW

Ethnobotany, phytochemistry and pharmacology of *Uncaria* (Rubiaceae)

pp 5–29

Mary E. Heitzman, Catherine C. Neto, Elizabeth Winiarz,
Abraham J. Vaisberg, Gerald B. Hammond*

A review of the pharmacology and phytochemistry of *Uncaria* is presented. Emphasis is placed on new compounds and recent pharmacological studies, which are reported according to cytotoxicity, anti-inflammatory, antiviral, immunostimulation, antioxidant, CNS-related response, vascular, hypotensive, mutagenicity and antibacterial properties.



FULL PAPERS

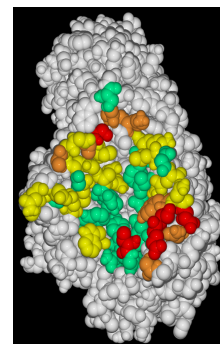
PROTEIN BIOCHEMISTRY

Inhibitory specificity and insecticidal selectivity of α -amylase inhibitor from *Phaseolus vulgaris*

pp 31–39

Ivan Klüh, Martin Horn, Jana Hýblová, Jan Hubert,
Lucie Dolečková-Marešová, Zdeněk Voburka, Iva Kudlíková,
František Kocourek, Michael Mareš*

The inhibitory spectrum of α -amylase inhibitor α AI-1 from common bean (*Phaseolus vulgaris* cv. Magna) was screened in vitro and in vivo, and the structural base of the inhibition was analyzed.

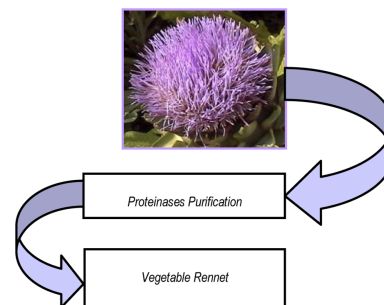


Purification of cynarases from artichoke (*Cynara scolymus* L.): enzymatic properties of cynarase A

pp 41–49

Lara Sidrach, Francisco García-Cánovas, José Tudela,
José Neptuno Rodríguez-López*

Aspartic proteinases from flowers of *Cynara cardunculus* have been extensively studied and long used as a coagulants in the manufacture of several traditional Spanish and Portuguese cheeses.

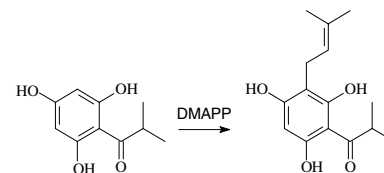


The first prenylation step in hyperforin biosynthesis

pp 51–57

Zakia Boubakir, Till Beuerle, Benye Liu, Ludger Beerhues*

The dimethylallyltransferase catalyzing the prenylation of phlorisobutyrophenone in *Hypericum calycinum* cell cultures was detected and characterized.



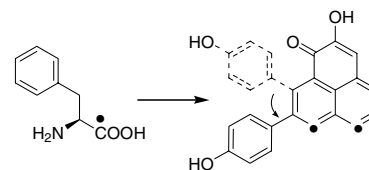
METABOLISM

The biosynthesis of 8-phenylphenalenones from *Eichhornia crassipes* involves a putative aryl migration step

pp 59–64

Dirk Hölscher, Bernd Schneider*

Phenylphenalenones with a lateral phenyl ring in unusual 8-position have been isolated from *Eichhornia crassipes* (Pontederiaceae). The structures were elucidated by spectrometric methods including NMR and MS analysis. The incorporation of two molecules of [$1-^{13}\text{C}$]phenylalanine provides experimental evidence for the biosynthesis via 1,2-aryl migration from an intermediate of the 9-phenylphenalenone type.

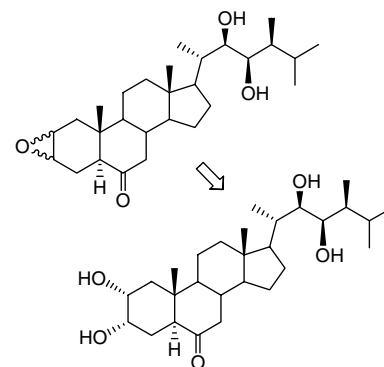


2,3-Epoxybrassinosteroids are intermediates in the biosynthesis of castasterone in seedlings of *Secale cereale*

pp 65–72

Andrey Antonchick, Aleš Svatoš, Bernd Schneider*, Olga V. Konstantinova, Vladimir N. Zhabinskii, Vladimir A. Khrpach

A brassinosteroid biosynthetic pathway from teasterone/typhasterol via 2,3-epoxy-brassinosteroids to castasterone has been found in seedlings of *Secale cereale*. Epoxide hydrolysis resulting in stereoisomeric vicinal 2,3-diols followed by inversion of configuration at C-2 and C-3 was demonstrated by stepwise administration of deuterated precursors and HPLC–ESI–MS–SIM detection.

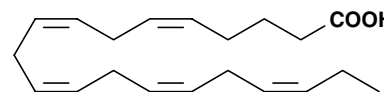


Lipid composition of the red alga *Tichocarpus crinitus* exposed to different levels of photon irradiance

pp 73–79

Svetlana V. Khotimchenko*, Irina M. Yakovleva

Photon irradiance conditions affected the lipids of *Tichocarpus crinitus*. This alga was able to change the content of storage and structural lipids and the composition of fatty acids especially in individual lipids. These alterations may be considered as the response of the algal cells to the varying light conditions.

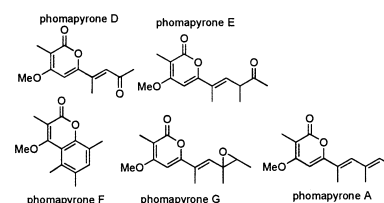


Phomapyrones from blackleg causing phytopathogenic fungi: isolation, structure determination, biosyntheses and biological activity

pp 81–87

M. Soledade C. Pedras*, Paulo B. Chumala

Phomapyrones D–G were isolated from cultures of the fungal plant pathogen *Leptosphaeria maculans*/*Phoma lingam* and the biosynthesis of phomapyrone A was investigated.



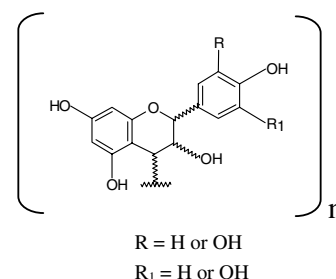
BIOACTIVE PRODUCTS

Antioxidant properties of proanthocyanidins of *Uncaria tomentosa* bark decoction: a mechanism for anti-inflammatory activity

pp 89–98

Cristina Gonçalves, Teresa Dinis*, Maria Teresa Batista

Proanthocyanidins are representative constituents of *Uncaria tomentosa* decoction. The reported findings confirm some of their biological effects and provide a contribution for a better understanding of its anti-inflammatory activity.

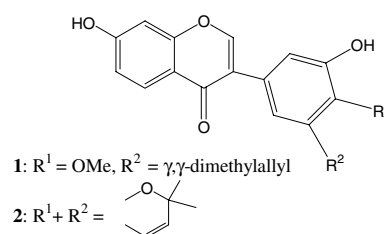


Antimicrobial and radical scavenging flavonoids from the stem wood of *Erythrina latissima*

pp 99–104

Musa Chacha, Gomotsang Bojase-Moleta, Runner R.T. Majinda*

The stem wood of *Erythrina latissima* yielded two isoflavones, erylatissins A **1** and B **2**, and a flavanone (–)-7,3'-dihydroxy-4'-methoxy-5'-(γ,γ -dimethylallyl)flavanone **3**, in addition to ten known flavonoids. The isolated compounds showed antimicrobial activity against *Escherichia coli*, *Staphylococcus aureus*, *Bacillus subtilis* and *Candida mycoderma*, as well as exhibited weak radical scavenging properties towards DPPH radical.



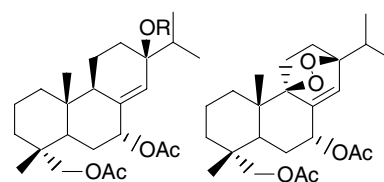
CHEMISTRY

Abietane diterpenes from the cones of *Cedrus atlantica*

pp 105–111

Alejandro F. Barrero*, José F. Quílez del Moral, M. Mar Herrador, Jesus F. Arteaga, Mohamed Akssira, Ahmed Benharref, Mohamed Dakir

Five abietanes, three of them isolated as the corresponding acetate derivatives, were isolated from the cones of *Cedrus atlantica* collected in Morocco. The cytotoxicity of the abietane diterpenoids was tested against five cell lines.

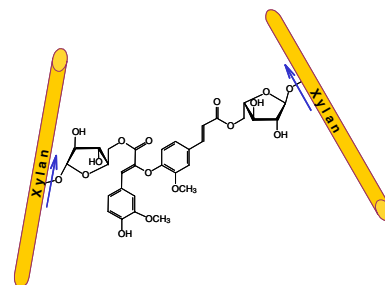


Isolation and structural identification of diarabinosyl 8-*O*-4-dehydrodiferulate from maize bran insoluble fibre

pp 113–124

Ella Allerdings, John Ralph, Paul F. Schatz, Diana Gniechwitz,
Hans Steinhart, Mirko Bunzel*

The isolated diarabinosyl ester of 8-*O*-4-dehydrodiferulic acid provides the evidence that dehydrodiferulates may act as intermolecular cross-linking agents in grass cell walls.



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* Corresponding author

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