

Phytochemistry Vol. 66, No. 22, 2005

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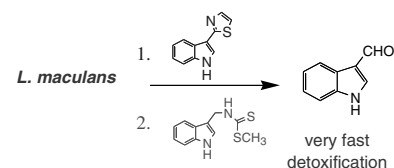
METABOLISM

Camalexin induces detoxification of the phytoalexin brassinin in the plant pathogen *Leptosphaeria maculans*

pp 2609–2616

M. Soledade C. Pedras^{*}, Mukund Jha, Oladapo G. Okeola

The impact of the phytoalexins camalexin and spirobrassinin on brassinin detoxification by a pathogenic fungus prevalent on crucifers is described.

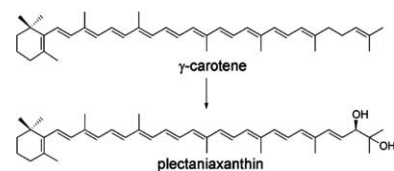


Biosynthesis of the xanthophyll plectanixanthin as a stress response in the red yeast *Dioszegia* (Tremellales, Heterobasidiomycetes, Fungi)

pp 2617–2626

Abderrahim Madhour, Heidrun Anke, Adele Mucci, Paolo Davoli, Roland W.S. Weber^{*}

Plectanixanthin, synthesized via lycopene, was the dominant carotenoid in *Dioszegia* sp. at oxidative stress induced by high aeration or free radical generators whereas its precursor γ -carotene accumulated at reduced aeration.

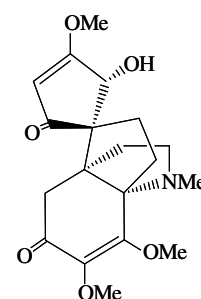


Dechlorodauricumine from cultured roots of *Menispermum dauricum*

pp 2627–2631

Yukihiro Sugimoto^{*}, Miharu Matsui, Hirosato Takikawa, Mitsuru Sasaki, Masako Kato

Dechlorodauricumine, a possible organic substrate for biochlorination, was isolated from cultured roots of *Menispermum dauricum*, a rich source of chlorinated alkaloids. Its structure was established by spectroscopic and chemical methods.



Changes in flux pattern of the central carbohydrate metabolism during kernel development in maize

pp 2632–2642

Christian Ettenhuber, Gertraud Spielbauer, Lilla Margl, L. Curtis Hannah, Alfons Gierl, Adelbert Bacher, Ulrich Genschel, Wolfgang Eisenreich *

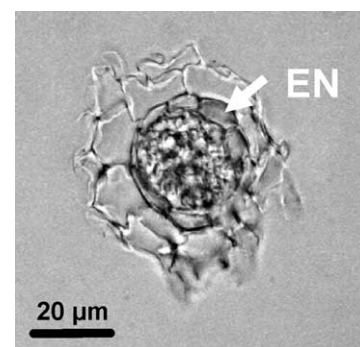
Maize kernels at three developmental stages were supplied with a mixture of [U-¹³C₆]glucose and unlabeled glucose. ¹³C NMR analysis of glucose obtained from starch hydrolysate indicates minor metabolic changes during the kernel development.

**Apoplastic polyesters in *Arabidopsis* surface tissues – A typical suberin and a particular cutin**

pp 2643–2658

Rochus Franke *, Isabel Briesen, Tobias Wojciechowski, Andrea Faust, Alexander Yephremov, Christiane Nawrath, Lukas Schreiber

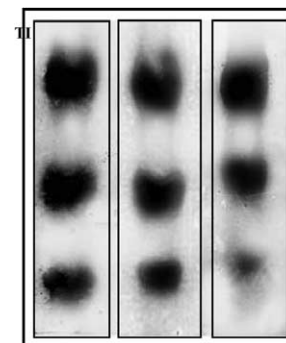
The aliphatic monomer composition of isolated *Arabidopsis* leaf cuticles and of suberin from *Arabidopsis* was determined by gas chromatography and mass spectrometry. A biosynthetic pathway is discussed.

**ECOLOGICAL BIOCHEMISTRY****Higher accumulation of proteinase inhibitors in flowers than leaves and fruits as a possible basis for differential feeding preference of *Helicoverpa armigera* on tomato (*Lycopersicon esculentum* Mill, Cv. Dhanashree)**

pp 2659–2667

Mrunal S. Damle, Ashok P. Giri, Mohini N. Sainani, Vidya S. Gupta *

Tomato (*Lycopersicon esculentum* Mill, Cv. Dhanashree) proteinase inhibitors (PIs) were tested for the potential inhibitory activity against *Helicoverpa armigera* gut proteases (HGP) by in vitro and in vivo studies. Analysis of TI and HGPI distribution among various plant parts of tomato showed that flowers accumulated about 300 and 1000 times higher TI while 700 and 400 times higher HGPI levels of inhibitors as compared to those in leaves and fruits, respectively. This can be attributed to the differential feeding preference of *H. armigera* on tomato. Tomato PIs inhibited about 50–80% HGP activity of *H. armigera* larvae feeding on various host plants including tomato, of larvae exposed to non-host plant PIs and of various larval instars. In addition, they were found to be highly stable to insect proteinases and exhibited similar isoform pattern against bovine trypsin, bovine chymotrypsin and HGP, when visualized by X-ray film contact print technique after native PAGE.



Essential oil composition is related to the natural habitats: *Coridothymus capitatus* and *Satureja thymbra* in NATURA 2000 sites of Crete

pp 2668–2673

Regina Karousou^{*}, Dimitrios N. Koureas, Stella Kokkini

The essential oils of *Coridothymus capitatus* and *Satureja thymbra* are characterized by high amounts of carvacrol or thymol or almost equal amounts of both phenols, depending on the habitat type wherefrom plants are growing. The natural habitat unit is introduced as a tool for the assessment of the essential oil variation.



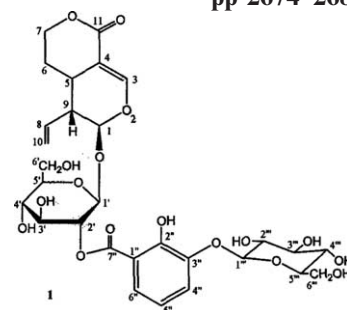
CHEMOTAXONOMY

Isolation of iridoid and secoiridoid glycosides and comparative study on *Radix gentianae* and related adulterants by HPLC analysis

pp 2674–2680

Ren-Wang Jiang, Ka-Lok Wong, Yiu-Man Chan, Hong-Xi Xu, Paul Pui-Hay But^{*}, Pang-Chui Shaw^{*}

An acylatedsecoiridoid glycoside, named gentiotrifloroside (**1**) together with six known compounds were isolated from *Gentiana triflora* and *Gentiana rigescens*. All seven compounds were used successfully as chemical markers for the comparison of the four species of *Gentiana* used as *Radix gentianae* and differentiation from related adulterants.



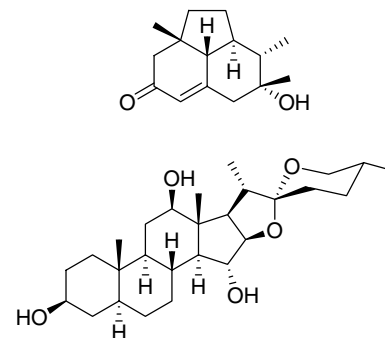
BIOACTIVE PRODUCTS

Structural characterization of phytotoxic terpenoids from *Cestrum parqui*

pp 2681–2688

Brigida D'Abrosca, Marina DellaGreca, Antonio Fiorentino^{*}, Pietro Monaco, Angela Natale, Palma Oriano, Armando Zarrelli

Four polyhydroxylated terpenoids have been isolated from aerial part of *Cestrum parqui* together with five known compounds. The chemical structures have been elucidated on the basis of NMR and mass spectral data. The phytotoxic activity of the compounds is reported.

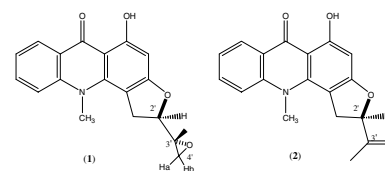


Algicidal and antifungal compounds from the roots of *Ruta graveolens* and synthesis of their analogs

pp 2689–2695

Kumudini M. Meepagala^{*}, Kevin K. Schrader, David E. Wedge, Stephen O. Duke

Ethyl acetate extract of *Ruta graveolens* roots yielded rutacridone epoxide (**1**) with potent selective algicidal activity towards *Oscillatoria perornata*, with lowest-complete inhibition concentration, LCIC = 0.1 ppm, 0.3 μ M. The absolute stereochemistry of (**2**) was determined to be 2'(R) and that of (**1**) to be 2'(R), 3'(R) by CD and NMR analysis.



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* Corresponding author

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