

Contents

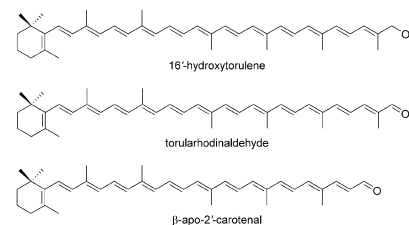
METABOLISM

Intermediates in the oxidative pathway from torulene to torularhodin in the red yeasts *Cystofilobasidium infirmominiatum* and *C. capitatum* (Heterobasidiomycetes, Fungi)

pp 2503–2511

Stephanie Herz, Roland W.S. Weber, Heidrun Anke, Adele Mucci, Paolo Davoli*

16'-Hydroxytorulene and torularhodinaldehyde were fully characterized as end products of torulene oxidation in the red yeast *Cystofilobasidium infirmominiatum*. Their production increased under enhanced oxidative stress where unprecedented formation of β -apo-2'-carotenal was also observed. In cultures of *C. capitatum*, 16'-hydroxytorulene was the only torulene oxidation product.

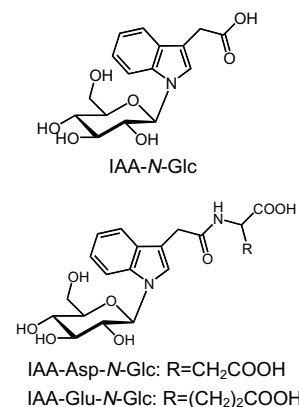


Metabolism of indole-3-acetic acid in rice: Identification and characterization of *N*- β -D-glucopyranosyl indole-3-acetic acid and its conjugates

pp 2512–2522

Kenji Kai, Kyo Wakasa, Hisashi Miyagawa*

N- β -D-Glucopyranosyl indole-3-acetic acid (IAA-*N*-Glc) and its aspartate and glutamate amides were identified in rice plants by LC-ESI-MS/MS and chemical synthesis. This is the first report to demonstrate that endogenous IAA undergoes *N*-glucosylation in herbaceous plants.

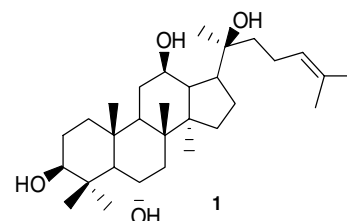


Biotransformation of 20(*S*)-protopanaxatriol by *Mucor spinosus* and the cytotoxic structure activity relationships of the transformed products

pp 2523–2530

Jie Zhang, Hongzhu Guo*, Yin Tian, Peng Liu, Na Li, Jianping Zhou, Dean Guo*

Microbial transformation of 20(*S*)-protopanaxatriol (**1**) by the fungus *Mucor spinosus* AS 3.3450 gave 10 metabolites. A possible biotransformation pathway was proposed and the in vitro cytotoxic activities of the metabolites against three human cancer cell lines were determined.



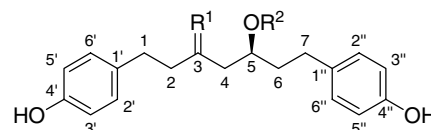
BIOACTIVE PRODUCTS

Anticancer diarylheptanoid glycosides from the inner bark of *Betula papyrifera*

pp 2531–2536

Vakhtang Mshvildadze, Jean Legault, Serge Lavoie, Charles Gauthier, André Pichette*

An anticancer diarylheptanoid glycoside, (*S*)-1,7-bis-(4-hydroxyphenyl)-heptan-3-one-5-*O*- α -L-arabinofuranosyl-(1 \rightarrow 6)- β -D-glucopyranoside, papyriferoside A (**1**), was isolated from the inner bark of the white birch *Betula papyrifera*.



- 1** $R^1 = O$; $R^2 = \alpha$ -L-Araf[1 \rightarrow 6]- β -D-Glcp
2 $R^1 = O$; $R^2 = \beta$ -D-Apif[1 \rightarrow 2]- β -D-Glcp
3 $R^1 = H_2$; $R^2 = \beta$ -D-Glcp
4 $R^1 = O$; $R^2 = \beta$ -D-Glcp

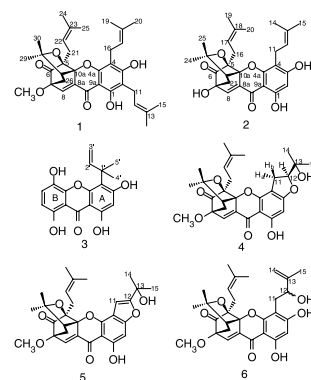
Cytotoxic caged-polyprenylated xanthonoids and a xanthone from *Garcinia cantleyana*

pp 2537–2544

Khalid A. Shadid, Khozirah Shaari*, Faridah Abas, Daud A. Israf, Ahmad S. Hamzah, Normawati Syakroni, Khoushik Saha, Nordin Hj. Lajis

Five caged-xanthonoids, cantleyanone A (**1**), 7-hydroxyforbesione (**2**), cantleyanones B–D (**4–6**) and a simple xanthone, 4-(1,1-dimethylprop-2-enyl)-1,3,5,8-tetrahydroxanthone (**3**) together with eight other known compounds were isolated from *Garcinia cantleyana*.

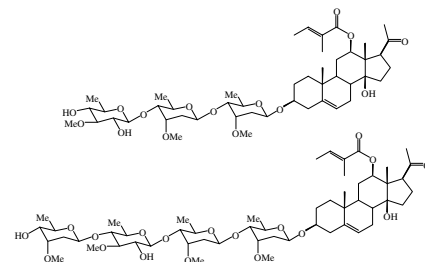
Significant cytotoxicity against MDA-MB-231, CaOV-3, MCF-7 and HeLa cancer cell-lines were demonstrated by cantleyanones B–D, 7-hydroxyforbesione, deoxygaudichaudione A and macranthol, with IC_{50} values ranging from 0.22 to 17.17 μ g/ml.

An appetite suppressant from *Hoodia* species

pp 2545–2553

Fanie R. van Heerden*, R. Marthinus Horak, Vinesh J. Maharaj*, Robert Vleggaar, Jeremiah V. Senabe, Philip J. Gunning

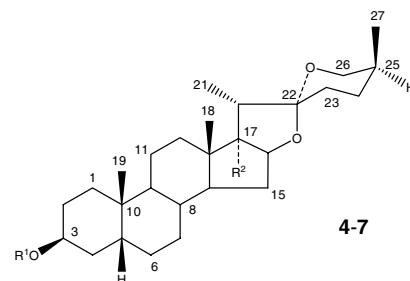
Two pregnane glycosides were isolated from *Hoodia gordonii* and *Hoodia pilifera*. The appetite-suppressant properties of the trisaccharide was determined using a rat model *in vivo* which showed significant decrease of food consumption over an 8 day period and a body mass decrease when compared to a control sample.

Steroidal saponins from *Asparagus acutifolius*

pp 2554–2562

Marc Sautour, Tomofumi Miyamoto, Marie-Aleth Lacaille-Dubois*

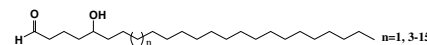
Three furostanol (**1–3**) and four spirostanol saponins (**4–7**) were isolated from the roots of *Asparagus acutifolius* L. Compounds **4–7** demonstrated antifungal activity against the human pathogenic yeasts *Candida albicans*, *C. glabrata* and *C. tropicalis*.



CHEMISTRY**Very-long-chain hydroxyaldehydes from the cuticular wax of *Taxus baccata* needles****pp 2563–2569**

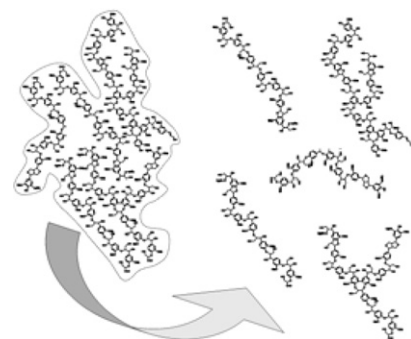
Miao Wen, Reinhard Jetter*

In the cuticular wax of *Taxus baccata* needles, homologous series of very-long-chain 1,5-alkanediols and 5-hydroxyaldehydes were identified by various chemical transformations with product assignment using GC–MS.

**On the propensity of lignin to associate: A size exclusion chromatography study with lignin derivatives isolated from different plant species****pp 2570–2583**

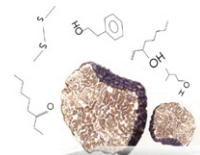
Anderson Guerra, Armindo R. Gaspar, Sofia Contreras, Lucian A. Lucia, Claudia Crestini, Dimitris S. Argyropoulos*

Lignins isolated from softwoods were found to associate/dissociate to a greater extent than lignins from hardwoods and wheat straw. Extensive characterization of these lignins revealed salient features of these events: association/dissociation phenomena are governed by chain entanglements operating within different macromolecules and intermolecular orbital interactions, dominated by those of the HOMO–LUMO type.

**Discrimination of truffle fruiting body versus mycelial aromas by stir bar sorptive extraction****pp 2584–2598**

Richard Splivallo, Simone Bossi, Massimo Maffei, Paola Bonfante*

Investigation of the aromas of three truffle species reveals a large variety of previously undescribed volatile organic compounds and confirms deep metabolic changes between the vegetative (mycelium) and reproductive (ascocarp) stages.

**OTHER CONTENTS****Announcement: The Phytochemical Society of North America****p I**

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