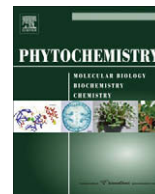




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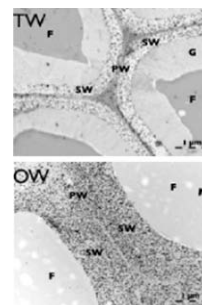
MOLECULAR GENETICS AND GENOMICS

Cloning and expression analysis of a wood-associated xylosidase gene (*PtaBXL1*) in poplar tension wood

pp 163–172

Raphael Decou, Sabine Lhernould, Françoise Laurans, Elodie Sulpice, Jean-Charles Leplé, Annabelle Déjardin, Gilles Pilate, Guy Costa*

Whereas xylans are strongly represented in wood, we show that they miss the G-layers of the fiber secondary wall. A wood-specific β -xylosidase, probably implicated in wood remodeling during tension wood formation has been characterized.



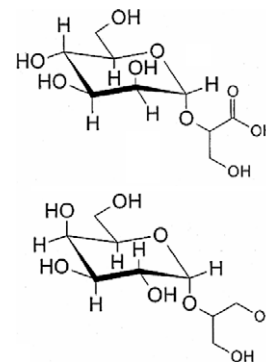
METABOLISM

Impact of the salt stress on the photosynthetic carbon flux and ^{13}C -label distribution within floridoside and digeneaside in *Solieria chordalis*

pp 173–184

Stéphanie Bondu*, Stephane Cerantola, Nelly Kervarec, Eric Deslandes

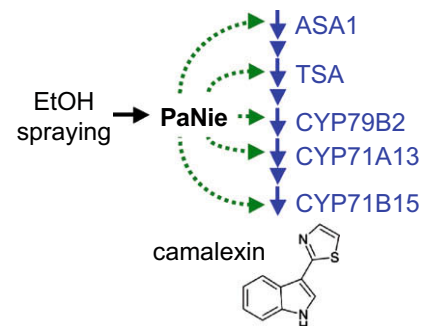
This work describes a pulse-chase labelling experiment with NMR detection in order to investigate the flux of photosynthetic carbon, the isotopomers composition and ^{13}C -label distribution in the low-molecular weight carbohydrates (floridoside and digeneaside) from the red alga *Solieria chordalis*, incubated in different salinities media (22, 34 and 50 psu).

**Inducible expression of a Nep1-like protein serves as a model trigger system of camalexin biosynthesis**

pp 185–189

Thomas Rauhut, Borries Luberacki, Hanns Ulrich Seitz, Erich Glawischnig*

Inducible expression of the Nep1-like protein PaNie is a highly reproducible trigger of camalexin biosynthetic gene induction in leaves. Flowers and siliques show low capability for camalexin biosynthesis.

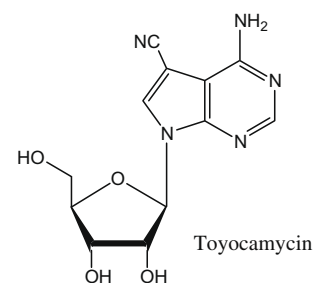


Toyocamycin specifically inhibits auxin signaling mediated by SCF^{TIR1} pathway

pp 190–197

Ken-ichiro Hayashi*, Shuichi Kamio, Yutaka Oono, Leroy B. Townsend, Hiroshi Nozaki

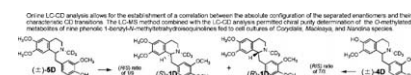
Toyocamycin was identified as auxin signaling inhibitor and would act on the ubiquitination process regulated by SCF(TIR1) machineries. The structure-activity relationships of nine toyocamycin-related compounds were also investigated.

**Enantiomeric separation of racemic 1-benzyl-*N*-methyltetrahydroisoquinolines on chiral columns and chiral purity determinations of the *O*-methylated metabolites in plant cell cultures by HPLC-CD on-line coupling in combination with HPLC-MS**

pp 198–206

Kinuko Iwasa*, Yasuhiro Doi, Teturo Takahashi, Wenhua Cui, Yumi Nishiyama, Chisato Tode, Masataka Moriyasu, Kazuyoshi Takeda, Hiromichi Minami, Nobuhiro Ikezawa, Fumihiko Sato

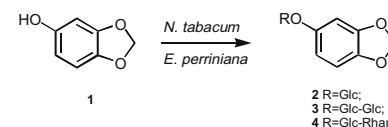
Online LC-CD analysis allows establishment of a correlation between the absolute configuration of separated enantiomers and their characteristic CD transitions. The LC-MS method, combined with LC-CD analysis, permitted chiral purity determination of the *O*-methylated metabolites of nine phenolic 1-benzyl-*N*-methyltetrahydroisoquinolines administered to cell cultures of *Corydalis*, *Macleaya*, and *Nandina* species.

**Glycosylation of sesamol by cultured plant cells**

pp 207–210

Kei Shimoda, Hiromasa Ishimoto, Tomoyuki Kamiue, Tatsunari Kobayashi, Hatsuyuki Hamada, Hiroki Hamada*

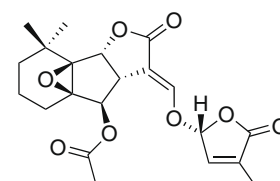
Sesamol (1) was converted into two biotransformation products 3 and 4 together with known product 2 by cultured cells of *Nicotiana tabacum* and *Eucllyptus perriniana*.

**ECOLOGICAL BIOCHEMISTRY****Fabacyl acetate, a germination stimulant for root parasitic plants from *Pisum sativum***

pp 211–215

Xiaonan Xie, Kaori Yoneyama, Yuta Harada, Norio Fusegi, Yoichi Yamada, Satoshi Ito, Takao Yokota, Yasutomo Takeuchi, Koichi Yoneyama*

Fabacyl acetate, a germination stimulant for root parasitic plants, was isolated from root exudates of pea (*Pisum sativum* L.) and its structure was determined as *ent*-2'-*epi*-4a,8a-epoxyorobanchyl acetate. Fabacyl acetate was one of major strigolactones in Fabaceae plants.



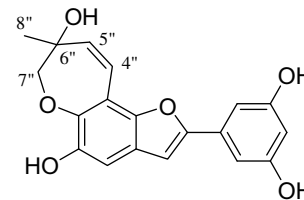
BIOACTIVE PRODUCTS

Prenylated arylbenzofuran derivatives from *Morus mesozygia* with antioxidant activity

pp 216–221

Gilbert D.W.F. Kapche*, Christian. D. Fozing, Jean H. Donfack, Ghislain W. Fotso, Dawe Amadou, Angèle. N. Tchana, Merhatibeb Bezabih, Paul F. Moundipa, Bonaventure T. Ngadjui, Berhanu M. Abegaz*

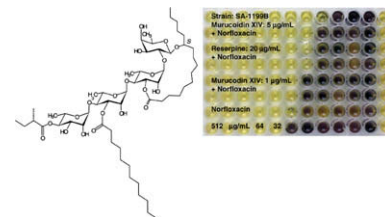
Five prenylated arylbenzofurans, moracin Q–U, were isolated from *Morus mesozygia* (Moraceae). Their structures were elucidated on the basis of spectroscopic evidence. Along with these compounds, 3 β -acetoxyurs-12-en-11-one, marsformoxide, moracin C, moracin M, moracin K, artocarpesin, aycloartocarpesin, morachalcone A were also isolated. Four of the five compounds, (Moracin R–U) displayed potent antioxidant activity.

Bacterial resistance modifying tetrasaccharide agents from *Ipomoea murucoides*

pp 222–227

Lilia Chérigo, Rogelio Pereda-Miranda*, Simon Gibbons

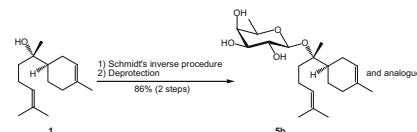
CHCl₃-soluble extracts from flowers of *Ipomoea murucoides*, through preparative-scale recycling HPLC, yielded five linear hetero-tetrasaccharides of jalapinic acid, murucoidins XII–XVI, which displayed resistance modifying activity against strains of *Staphylococcus aureus* possessing multidrug efflux pumps.

Synthesis and cytotoxicity evaluation of natural α -bisabolol β -D-fucopyranoside and analogues

pp 228–236

Marianne Piochon, Jean Legault, Charles Gauthier, André Pichette*

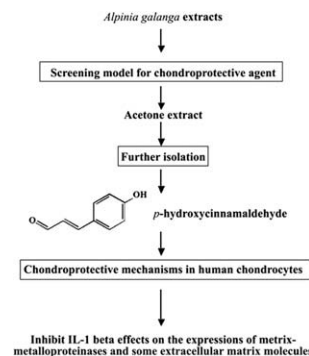
The natural α -bisabolol β -D-fucopyranoside (**5b**) as well as five analogues were efficiently synthesized in excellent yields (83–85%) using Schmidt's inverse procedure. α -Bisabolol α -L-rhamnopyranoside (**6b**) exhibited the strongest cytotoxic activity against cancer cell lines (IC₅₀ 40–64 μ M).

The effects of *p*-hydroxycinnamaldehyde from *Alpinia galanga* extracts on human chondrocytes

pp 237–243

Thanyaluck Phitak, Kanyamas Choocheep, Peraphan Pothacharoen, Wilart Pompimon, Bhusana Premanode, Prachya Kongtawelert*

1. The acetone extract showed the chondroprotective effects in porcine cartilage explant screening model. Further purification analysis by using chromatography and NMR technique, respectively, *p*-hydroxycinnamaldehyde was identified as an active compound.
2. It showed reverse effects of IL-1 β , a pro-inflammatory cytokine which reduces cartilage degradation in human chondrocytes.

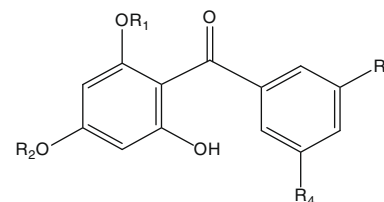


Cellular reactive oxygen species inhibitory constituents of *Hypericum thasium* Griseb

pp 244–249

Ozlem Demirkiran, M. Ahmed Mesaik, Hayrettin Beynek, Ahmed Abbaskhan, M. Iqbal Choudhary*

Four benzophenone derivatives **1–4**, a known benzophenone **5** and four known flavonoids were isolated from EtOAc extract of *Hypericum thasium*. Lucigenin- and luminal-based chemiluminescence assays were employed to monitor the inhibitory activity of these compounds against reactive oxygen species produced by human polymorphonutrophils.



- 1** R₁ = β-Xyl, R₂ = H, R₃ = R₄ = OH
2 R₁ = β-Xyl, R₂ = CH₃, R₃ = R₄ = OH
3 R₁ = 4-OAc-β-Xyl, R₂ = H, R₃ = R₄ = OH
4 R₁ = 3-OAc-α-Ara, R₂ = H, R₃ = R₄ = OH
5 R₁ = β-Glc, R₂ = R₃ = R₄ = H

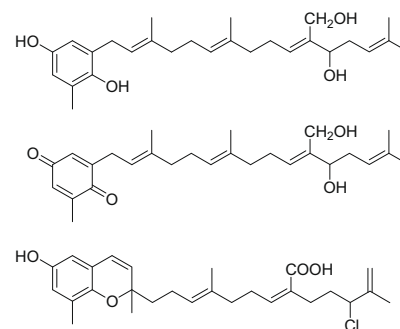
CHEMISTRY

Meroditerpenoids from the southern Australian marine brown alga *Sargassum fallax*

pp 250–255

Priyanka Reddy, Sylvia Urban*

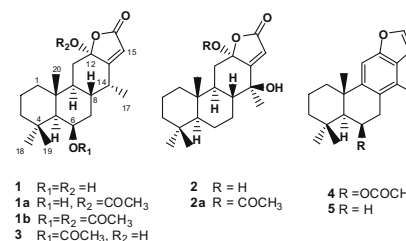
Chemical investigation of the Australian marine brown alga *Sargassum fallax* resulted in the isolation of three meroditerpenoids fallahydroquinone (**8**), fallaquinone (**9**) and fallachromenoic acid (**10**) together with the previously reported compounds sargaquinone (**1**), sargaquinoic acid (**2**), sargahydroquinoic acid (**3**) and sargachromenol (**11**). Compounds (**2**) and (**3**) displayed moderate antitumour activity.

Cassane Diterpenes from *Caesalpinia bonduc*

pp 256–261

Prem P. Yadav*, Ranjani Maurya, Jayanta Sarkar, Ashish Arora, Sanjeev Kanojiya, Sudhir Sinha, M.N. Srivastava, Ram Raghubir

Three cassane diterpene hemiketals, caesalpinolide C-E and one cassane furanoditerpene were isolated from *Caesalpinia bonduc* and structures were elucidated by spectroscopic analysis.

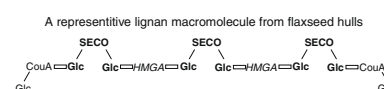


The chain length of lignan macromolecule from flaxseed hulls is determined by the incorporation of coumaric acid glucosides and ferulic acid glucosides

pp 262–269

Karin Struijs, Jean-Paul Vincken, Timo G. Doeswijk, Alphons G.J. Voragen, Harry Gruppen*

An inverse relationship between the amount of CouAG + FeAG and the molecular mass of lignan macromolecule from flaxseed hulls was found, suggesting that lignan macromolecule is terminated by CouAG and/or FeAG. It is hypothesized that the amount of CouAG + FeAG present during biosynthesis determines the chain length.

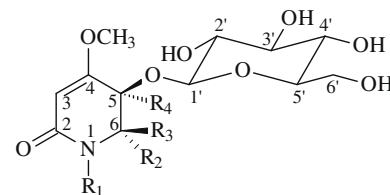


Cyanogenic and non-cyanogenic pyridone glucosides from *Acalypha indica* (Euphorbiaceae)

pp 270–277

Monika Hungeling, Matthias Lechtenberg, Frank R. Fronczek, Adolf Nahrstedt*

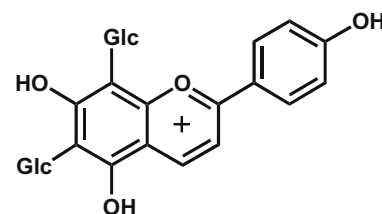
Seven pyridone derivatives and one corresponding seco compound have been isolated from inflorescences and leaves of *Acalypha indica* L. (Euphorbiaceae).

**C-glycosylanthocyanidins synthesized from C-glycosylflavones**

pp 278–287

Ørjan Bjarøy, Saleh Rayyan, Torgils Fossen, Kjersti Kalberg, Øyvind M. Andersen*

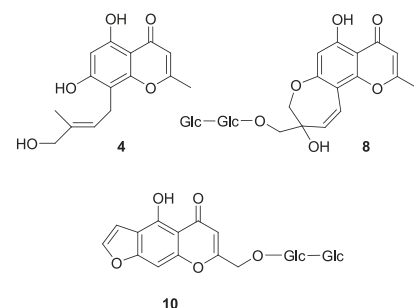
Nine C-glycosyl-3-deoxyanthocyanidins were for the first time synthesized from their respective C-glycosylflavones. 6,8-Di-C-β-glucosylapigeninidin and 6,8-di-C-β-glucosyl-4'-O-methylchrysinidin with C–C linkages between the sugar moieties and the aglycone, were found to be far more stable towards acid hydrolysis than pelargonidin 3-O-glucoside, which has the common anthocyanidin C–O linkage between the sugar and the aglycone.

**Chromones from the tubers of *Eranthis cilicica* and their antioxidant activity**

pp 288–293

Minpei Kuroda*, Singo Uchida, Kazuki Watanabe, Yoshihiro Mimaki*

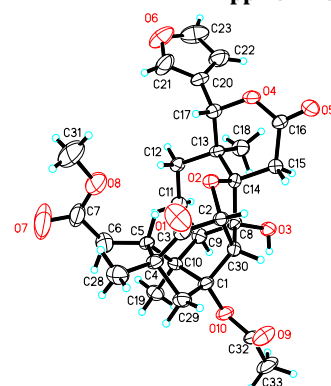
Phytochemical screening of tubers of *Eranthis cilicica* resulted in isolation of ten chromones (**1–10**), of which two were previously known.

**Khayanolides from African mahogany *Khaya senegalensis* (Meliaceae): A revision**

pp 294–299

Huaping Zhang, Junjie Tan, Don VanDerveer, Xi Wang, Michael J. Wargovich, Feng Chen*

The structures and absolute configurations of five khayanolides **1–5**, isolated from *Khaya senegalensis* were determined by spectroscopic methods including MS, NMR and X-ray crystallography. Four previously reported limonoids isolated from the same plant species need revision from khayanolides **6, 7** to **1, 2** and to phragmalin derivatives **8, 9** to **3, 4** respectively.

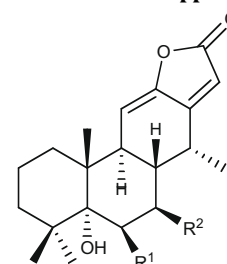


Cassane diterpenoids from the stem of *Caesalpinia pulcherrima*

pp 300–304

Wirote Pranithanchai, Chatchanok Karalai*, Chanita Ponglimanont, Sanan Subhadhirasakul, Kan Chantrapromma

Six cassane-type diterpenes and eight known compounds were isolated from the stem of *Caesalpinia pulcherrima*. The chemical structures were elucidated by analysis of their spectroscopic data.



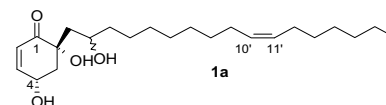
- 4 $R^1 = \text{OCOCH=CHPh}$, $R^2 = \text{OH}$
 5 $R^1 = \text{OCOPh}$, $R^2 = \text{H}$
 6 $R^1 = \text{OCOPh}$, $R^2 = \text{OH}$

Four anti-protozoal and anti-bacterial compounds from *Tapirira guianensis*

pp 305–311

Vincent Roumy*, Nicolas Fabre*, Bénédicte Portet, Geneviève Bourdy, Lucia Acebey, Claire Vigor, Alexis Valentin, Claude Moulis

Four cyclic alkyl polyol derivatives have been isolated from a CH_2Cl_2 extract of *Tapirira guianensis* bark. Their anti-leishmanial, anti-plasmodial, anti-bacterial and anti-fungal activities were evaluated *in vitro*.

**OTHER CONTENT****Announcement: Phytochemical Society of North America**

p I

* Corresponding author

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