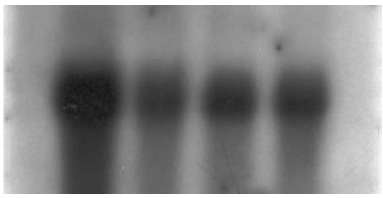
Seasonal cardenolide production and *Dop5βr* gene expression in natural populations of *Digitalis obscura*

Phytochemistry, 2004, **65**, 1869

Luis Roca-Pérez, Rafael Boluda, Isabel Gavidia, Pedro Pérez-Bermúdez

Departamento de Biología Vegetal, Facultad de Farmacia, Universidad de Valencia, Av. Vicent Andrés Estellés s/n, 46100 Burjassot (Valencia), Spain

Productivity variations and seasonal fluctuations of cardenolides have been studied in 10 natural populations of *Digitalis obscura*. Isolation and seasonal expression of the gene encoding the progesterone 5β-reductase are reported.



The class III peroxidase multigenic family in rice and its evolution in land plants

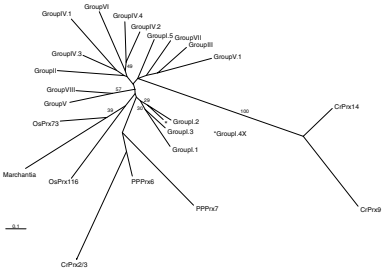
Phytochemistry, 2004, **65**, 1879

Filippo Passardi [a], David Longet [b], Claude Penel [a], Christophe Dunand [a]

[a] *Laboratory of Plant Physiology, University of Geneva, Quai Ernest-Ansermet 30, CH-1211 Geneva 4, Switzerland*

[b] *Department of Zoology and Animal Biology, University of Geneva, Quai Ernest-Ansermet 30, CH-1211 Geneva 4, Switzerland*

An extensive search was performed in rice genome in order to draw up the complete list of class III peroxidases present in this organism. Phylogenetic studies performed in rice and other plants identified a putative primitive peroxidase, which probably played a crucial role in apparition of land plants.



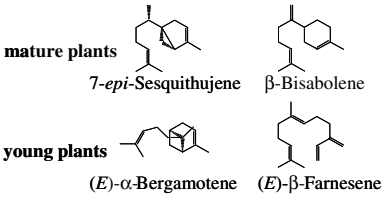
The sesquiterpene hydrocarbons of maize (*Zea mays*) form five groups with distinct developmental and organ-specific distributions

Phytochemistry, 2004, **65**, 1895

Tobias G. Köllner, Christiane Schnee, Jonathan Gershenzon, Jörg Degenhardt

Max Planck Institute for Chemical Ecology, Beutenberg Campus, Hans-Knöll-Strasse 8, D-07745 Jena, Germany

Analysis of the sesquiterpene content of young and mature maize plants revealed five groups of hydrocarbons, each with a different spatial and temporal distribution in the plant. Within each group, compounds co-occurred in the same constant ratio to one another, indicative of possible biosynthetic relationships.



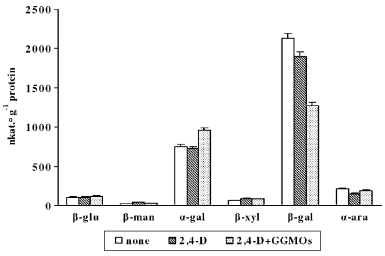
Changes in glycosidase activities during galactoglucomannan oligosaccharide inhibition of auxin induced growth

Phytochemistry, 2004, **65**, 1903

Ladislav Bilisics, Jozef Vojtaššák, Peter Capek, Karin Kollárová, Desana Lišková

Institute of Chemistry, Slovak Academy of Sciences, Dúbravská cesta 9, SK-845 38 Bratislava, Slovakia

The inhibition of 2,4-D-induced elongation growth by galactoglucomannan oligosaccharides in pea stem segments (*Pisum sativum* L. cv. Tyrkys) after 18 h of incubation results in changes of extracellular, intracellular and cell wall glycosidase activities (β-D-glucosidase, β-D-mannosidase, β-D-galactosidase, β-D-xylosidase, α-D-galactosidase, and α-L-arabinosidase).



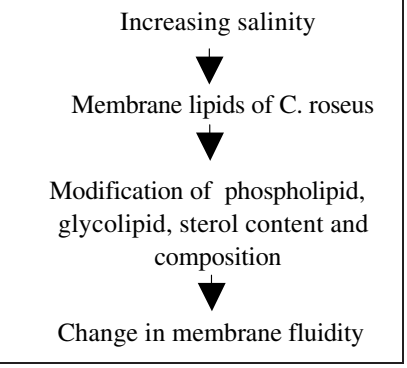
Salt-induced lipid changes in *Catharanthus roseus* cultured cell suspensions

Phytochemistry, 2004, **65**, 1911

Salem Elkahoui [a], Abderrazek Smaoui [b], Mokhtar Zarrouk [b], Rachid Ghrir [a], Férid Limam [a]

[a] *Laboratoire Interactions Légumineuses–Microorganismes, Institut National de Recherche Scientifique et Technique, BP 95-2050 Hammam-Lif, Tunisia*
[b] *Laboratoire de caractérisation et qualité de l'huile d'olive, Institut National de Recherche Scientifique et Technique, BP 95-2050 Hammam-Lif, Tunisia*

Exposure of *Catharanthus roseus* cell suspensions to increasing salinity induced several changes in membrane lipid content and composition. The observed increase in phospholipid, free sterol and fatty acid unsaturation, suggests a modification in membrane fluidity.



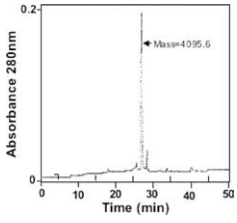
Isolation and characterization of wound-inducible carboxypeptidase inhibitor from tomato leaves

Phytochemistry, 2004, **65**, 1919

Monica Díez-Díaz [a,b], Vicente Conejero [b], Ismael Rodrigo [b], Gregory Pearce [a], Clarence A. Ryan [a]

[a] *Institute of Biological Chemistry, Washington State University, Pullman, WA 99164-6340, USA*
[b] *Instituto de Biologi Molecular y Celular de Plantas, Universidad Politecnica de Valencia, Camino de Vera s/n, 46022 Valencia, Spain*

Carboxypeptidase inhibitor protein, previously reported not to be wound-inducible in tomato leaves, was identified in wounded tomato leaves and was isolated and characterized.

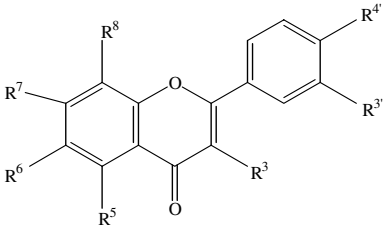


Flavonoids from shoots and roots of *Trifolium repens* (white clover) grown in presence or absence of the arbuscular mycorrhizal fungus *Glomus intraradices*

Phytochemistry, 2004, **65**, 1925

María A. Ponce, José M. Scervino, Rosa Erra-Balsells, Juan A. Ocampo, Alicia M. Godeas

Analysis of extracts obtained from *Trifolium repens* roots and shoots revealed that compositions of the flavonoid mixtures varied in the presence or absence of the arbuscular fungus *Glomus intraradices*.

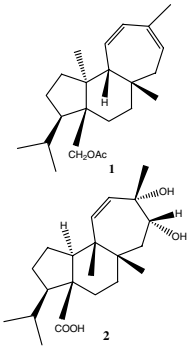


Mulinane-type diterpenoids from *Azorella compacta* display antiplasmodial activity

Phytochemistry, 2004, **65**, 1931

Luis A. Loyola, Jorge Bórquez, Glauco Morales, Aurelio San-Martín, Jose Darias, Ninoska Flores, Alberto Giménez

Two mulinane-type diterpenoids were isolated from *Azorella compacta*: 20-hydroxymulin-11,13-dienyl acetate **1** and 13,14-dihydroxymulin-11-en-20-oic acid **2**. Both compounds, as well as three previously isolated diterpenes were evaluated for new potential as in vivo growth inhibitors of *Plasmodium berghei*.

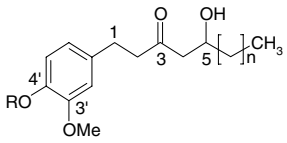


Fresh organically grown ginger (*Zingiber officinale*): composition and effects on LPS-induced PGE_2 production

Phytochemistry, 2004, **65**, 1937

Shivanand D. Jolad, R. Clark Lantz, Aniko M. Solyom, Guan J. Chen, Robert B. Bates, Barbara N. Timmermann

Ginger extracts were analyzed directly by GC–MS without modification to trimethylsilyl ether derivatives. From organically grown Hawaiian white and yellow ginger varieties 51 compounds were identified, of which 20 had not been previously reported as ginger constituents.



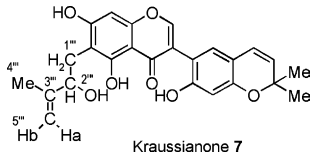
Minor pyrano-isoflavones from *Eriosema kraussianum*: activity-, structure-, and chemical reaction studies

Phytochemistry, 2004, **65**, 1955

Siegfried E. Drewes [a], Marion M. Horn [a], Fatima Khan [a], Orde Q. Munro [a], Jabu T.B. Dhlamini [b], Christopher Rakuambo [c], J.J. Marion Meyer [c]

[a] *School of Chemical and Physical Sciences (Chemistry), University of KwaZulu-Natal, Private Bag XO1, Scottsville, 3209 Pietermaritzburg, South Africa*
[b] *10 Baverstock Street, Pietermaritzburg 3201, South Africa*
[c] *Department of Botany, University of Pretoria, Pretoria 0002, South Africa*

The structure of one of the minor isoflavones is shown (**7**). X-ray studies confirm the structure of the pyrano-isoflavone isolated previously.



Kraussianone **7**

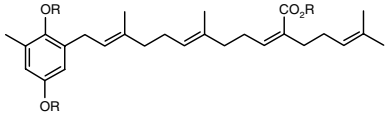
Insect growth inhibition by tocotrienols and hydroquinones from *Roldana barba-johannis*

Phytochemistry, 2004, **65**, 1963

Carlos L. Céspedes [a], Patricio Torres [b], Juan C. Marín [a], Amira Arciniegas [a], Alfonso Romo de Vivar [a], Ana L. Pérez-Castorena [a], Eduardo Aranda [a]

[a] *Chemical Ecology Lab-2C, Natural Products Department, Chemistry Institute, Universidad Nacional Autónoma de México, Av. Universidad 3000, Coyoacán 04510, México*
[b] *Botany Department, Faculty of Natural Sciences and Oceanography, University of Concepción, Concepción, Chile*
[c] *Biological Control Laboratory, Biotechnology Center, Universidad Autonoma del Estado de Morelos, Cuernavaca, Mexico*

Tocotrienols and hydroquinones displaced insecticidal and insect growth inhibitory activities against Fall Armyworm (*Spodoptera frugiperda*).



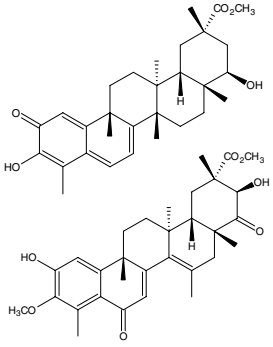
Antioxidant phenolic and quinonemethide triterpenes from *Cheiloclinium cognatum*

Phytochemistry, 2004, **65**, 1977

Alex Haroldo Jeller [a], Dulce Helena Siqueira Silva [b], Luciano Morais Lião [c], Vanderlan da Silva Bolzani [b], Maysa Furlan [b]

[a] *Departamento de Química, Universidade Estadual de Mato Grosso do Sul, CP 351, 79804-970 Dourados, MS, Brazil*
[b] *Instituto de Química, Universidade Estadual Paulista, CP 355, Campus de Araraquara, 14801-900 Araraquara, SP, Brazil*
[c] *Inistituto de Química, Universidade Federal de Goiâs, CP 131, 74001-970 Goiânia, GO, Brazil*

The triterpenes, 22β-hydroxypristimerin and cognatine, were isolated together with seven known compounds from *Cheiloclinium cognatum*. The isolates were investigated for their radical scavenging abilities.



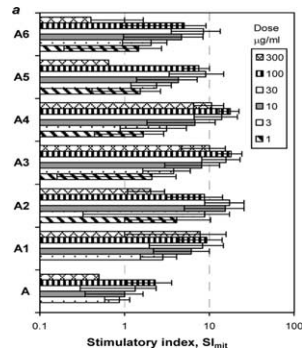
Water-soluble polysaccharides from *Salvia officinalis* L. possessing immunomodulatory activity

Phytochemistry, 2004, **65**, 1983

Peter Capek [a], Věra Hříbalová [b]

[a] *Institute of Chemistry, Slovak Academy of Sciences, Dúbravská cesta 9, 845 38 Bratislava, Slovak Republic*
[b] *National Institute of Public Health, Šrobárova 48, 100 42 Praha 10, Czech Republic*

Immunomodulatory study revealed the capacity of all ion-exchange fractions of the polysaccharide complex A to induce the proliferation of rat thymocytes in the order $A_2 > A_3 = A_4 > A_1 = A_5 = A_6 > A$.

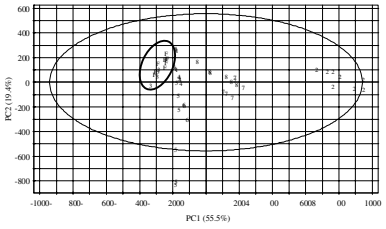


Metabolomic analysis of *Strychnos nux-vomica*, *Strychnos icaja* and *Strychnos ignatii* extracts by ^{1}H nuclear magnetic resonance spectrometry and multivariate analysis techniques

Phytochemistry, 2004, **65**, 1993

Michel Frédérich, Young Hae Choi, Luc Angenot, Goetz Harnischfeger, Alfons W.M. Lefeber, Robert Verpoorte

^{1}H Nuclear magnetic resonance spectrometry and multivariate analysis techniques were applied for the metabolic profiling of three *Strychnos* species: *S. nux-vomica, S. ignatii*, and *S. icaja*.



Constituents from the bark of *Tabebuia impetiginosa*

Phytochemistry, 2004, **65**, 2003

Tsutomu Warashina, Yoshimi Nagatani, Tadataka Noro

Institute for Environmental Sciences, University of Shizuoka, 52-1 Yada, Shizuoka 422-8526, Japan

Sixteen compounds were isolated from the bark of *Tabebuia impetiginosa*, whose structures were determined using both spectroscopic and chemical methods.