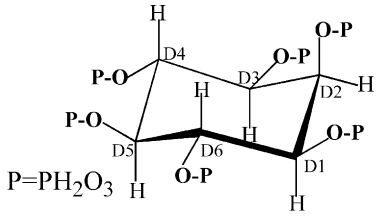
Phytochemistry, 2003, **64**, 1033

myo-Inositol-1,2,3,4,5,6-hexa*kis*phosphate

Victor Raboy[a]

[a]*USDA-ARS, 1691 South 2700 West, Aberdeen, ID 83210, USA*

myo-Inositol-1,2,3,4,5,6-hexa*kis*phosphate (Ins P_6 or phytic acid) is a common constituent of eukaryotic cells where it has a large number of functions in addition to its classical role in storage of phosphorus and minerals in seeds and other plant tissues.



***myo*-Inositol-1,2,3,4,5,6-hexa*kis*phosphate or Phytic Acid**

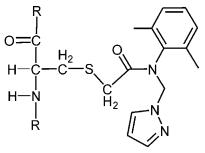
Phytochemistry, 2003, **64**, 1045

Covalent binding of chloroacetamide herbicides to the active site cysteine of plant type III polyketide synthases

Christian Eckermann[a], Bernd Matthes[b], Manfred Nimtz[c], Verena Reiser[b], Barbara Lederer[b], Peter Böger[b], Joachim Schröder[a]

[a]*Institut für Biologie II, Universität Freiburg, D-79104 Freiburg, Germany*
[b]*Lehrstuhl für Physiologie und Biochemie der Pflanzen, Universität Konstanz, D-78457 Konstanz, Germany*
[c]*Gesellschaft für Biotechnologische Forschung, Mascheroder Weg 1, D-38124 Braunschweig, Germany*

These herbicides inactivate chalcone synthase and stilbene synthase irreversibly by covalent binding to the active site cysteine. A stilbenecarboxylate synthase and a pyrone synthase are not affected, suggesting subtle differences in the accessability of the active sites.



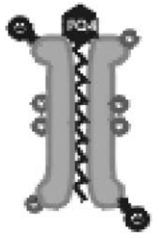
Phytochemistry, 2003, **64**, 1055

Plastoquinones are effectively reduced by ferredoxin:$NADP^+$ oxidoreductase in the presence of sodium cholate micelles Significance for cyclic electron transport and chlororespiration

Monika Bojko, Jerzy Kruk, Stanisław Więckowski

Department of Physiology and Biochemistry of Plants, Faculty of Biotechnology, Jagiellonian University, ul. Gronostajowa 7, 30-387 Kraków, Poland

The stimulatory effect of sodium cholate on plastoquinone-mediated NADPH oxidation and oxygen uptake in the presence of ferrodoxin:$NADP^+$ oxireductase is described.



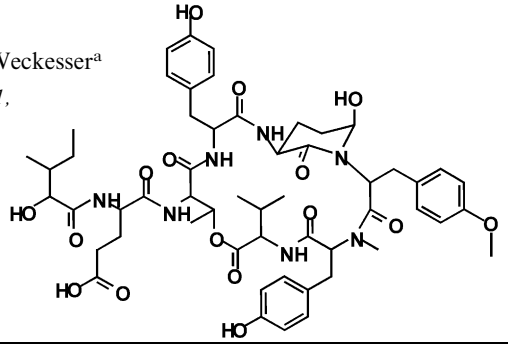
Phytochemistry, 2003, **64**, 1061

Hofmannolin, a cyanopeptolin from *Scytonema hofmanni* PCC 7110

Ute Matern[a], Lukas Oberer[b], Marcel Erhard[c], Michael Herdman[d], Jürgen Weckesser[a]

[a]*Institut für Biologie II (Mikrobiologie), Albert-Ludwigs-Universität, Schänzle-Straße 1, D-79104 Freiburg i. Br., Germany*
[b]*Novartis Pharma AG, Preclinical Research, CH-4002 Basel, Switzerland*
[c]*AnagnosTec GmbH, Im Biotechnologiepark, D-14943 Luckenwalde, Germany*
[d]*Unité de Physiologie Microbienne (CNRS URA 2172), Département de Biochimie et Génétique Moleculaire, Institut Pasteur, 28 Rue du Dr. Roux, F-75724 Paris Cedex 15, France*

The cyclic depsipeptide hofmannolin was isolated from the terrestrial cyanobacterium *Scytonema hofmanni* PCC 7110 and classified as a cyanopeptolin.



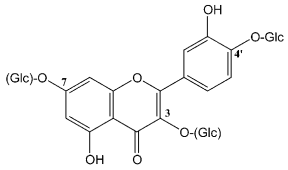
Phytochemistry, 2003, **64**, 1069

Cloning and regiospecificity studies of two flavonoid glucosyltransferases from *Allium cepa*

Catherine M. Kramer[a], Rogerio T.N. Prata[a], Michael G. Willits[a], Vincenzo De Luca[b], John C. Steffens[a], Gerson Graser[a]

[a]*Syngenta Biotechnology Incorporated, 3054 Cornwallis Road, Research Triangle Park, NC 27709, USA*
[b]*Biology Department, Brock University, St. Catherines, Ontario, Canada L2S 3A1*

Two UDP-glucose-dependent flavonoid glucosyltransferases isolated from the epidermal layer of yellow onion (*Allium cepa*) were heterologously expressed for the first time and their substrate specificity investigated. The two enzymes exhibited significantly different substrate specificity, but regiospecificity of both was consistent with quercetin glucosides found in *A. cepa*.



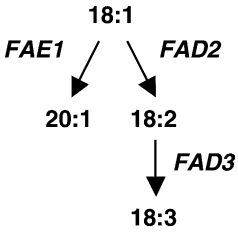
Phytochemistry, 2003, **64**, 1077

Natural variation for seed oil composition in *Arabidopsis thaliana*

Carmel M. O'Neill, Samantha Gill, Douglas Hobbs, Colin Morgan, Ian Bancroft

John Innes Centre, Norwich Research Park, Colney, Norwich NR4 7UH, UK

The natural variation for seed oil content and fatty acid composition was surveyed in 360 publicly available accessions of *Arabidopsis thaliana* and candidates for genes underlying a proportion of the variation were identified.



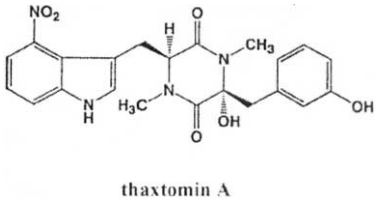
Phytochemistry, 2003, **64**, 1091

More chemistry of the thaxtomin phytotoxins

Russell R. King[a], C. Harold Lawrence, Jean Embleton[a], Larry A. Calhoun[b]

[a]*Agriculture and Agri-Food Canada, Potato Research Centre, PO Box 20280, Fredericton, New Brunswick, Canada E3B 4Z7*
[b]*Department of Chemistry, University of New Brunswick, Fredericton, New Brunswick, Canada E3B 6E2*

Product analysis indicated a possible involvement of *N*-acetyl tryptophan and 4-nitrotryptophan in biosynthesis of the thaxtomins. Three new thaxtomin analogues were also isolated.



thaxtomin A

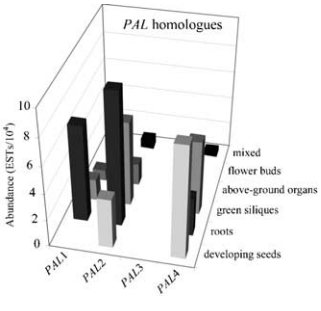
Phytochemistry, 2003, **64**, 1097

An in silico assessment of gene function and organization of the phenylpropanoid pathway metabolic networks in *Arabidopsis thaliana* and limitations thereof

Michael A. Costa, R. Eric Collins, Aldwin M. Anterola, Fiona C. Cochrane, Laurence B. Davin, Norman G. Lewis

Institute of Biological Chemistry, Washington State University, Pullman, Washington 99164-6340, USA

In this study, an exhaustive analysis of The Institute for Genomic Research (TIGR) and The Arabidopsis Information Resource (TAIR) databases, together with all currently compiled EST sequence data, was carried out in order to determine to what extent the various metabolic networks from phenylalanine ammonia lyase (PAL) to the monolignols were organized and/or could be predicted. Only 13 out of 65 annotated genes in this pathway could be given a precise function.



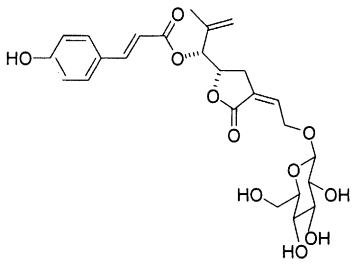
Phytochemistry, 2003, **64**, 1113

The absolute configuration of prunioside A from *Spiraea prunifolia* and biological activities of related compounds

Hyuncheol Oh[a,c], Hyungsoo Shin[b], Gi-Su Oh[b], Hyun-Ock Pae[b], Kyu-Yun Chai[b], Hun-Taeg Chung[b], Ho-Sub Lee[a,b]

[a]*Professional Graduate School of Oriental Medicine, Wonkwang University, Iksan, Chonbuk 570-749, South Korea*
[b]*Medicinal Resources Research Center, Wonkwang University, Iksan, Chonbuk 570-749, South Korea*
[c]*Korea Research Institute of Bioscience and Biotechnology, Taejon 305-600, South Korea*

The stereochemistry of prunioside A was determined by chemical transformations and NMR data analysis. Compounds related to prunioside A have inhibitory effects on the synthesis of nitric oxide in LPS-stimulated macrophage-like RAW 264.7 cells.



prunioside A

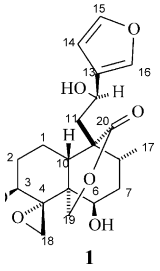
Phytochemistry, 2003, **64**, 1119

Antifeedant *neo*-clerodanes from *Teucrium tomentosum* Heyne. (Labiatae)

G.N. Krishna Kumari[a], S. Aravind[a], J. Balachandran[a], M.R. Ganesh[a], S. Soundarya Devi[b], S.S. Rajan[b], R. Malathi[b], K. Ravikumar[c]

[a]*T.R.Govindachari Centre for Natural Products, SPIC Science Foundation, 88, Mount Road, Chennai, 600 032, India*
[b]*Department of Crystallography & Biophysics, University of Madras, Guindy, Chennai-600 025, India*
[c]*Indian Institute of Chemical Technology, Hyderabad- 500 007, India*

An antifeedant *neo*-clerodane diterpenoid teuctosin (1) was isolated from the aerial parts of *Teucrium tomentosum*.



1

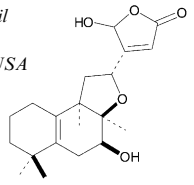
Phytochemistry, 2003, **64**, 1125

Diterpenes from *Alomia myriadenia* (Asteraceae) with cytotoxic and trypanocidal activity

Elita Scio[a,b], Antônia Ribeiro[a], Tânia M.A. Alves[a], Alvaro J. Romanha[c], José Dias de Souza Filho[d], Geoffrey A. Cordell[e], Carlos L. Zani[a]

[a]*Laboratório de Química de Produtos Naturais, CPqRR-FIOCRUZ, Av. Augusto de Lima, 1715, Belo Horizonte, MG 30190-002, Brazil*
[b]*Departamento de Bioquímica, ICB, Universidade Federal de Juiz de Fora, Juiz de Fora, MG, 36036-030, Brazil*
[c]*Laboratório de Parasitologia Celular e Molecular, CPqRR-FIOCRUZ, Av. Augusto de Lima, 1715, Belo Horizonte, MG 30190-002, Brazil*
[d]*Departamento de Química, ICEx, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil*
[e]*Department of Medicinal Chemistry and Pharmacognosy, College of Pharmacy, University of Illinois at Chicago, Chicago, IL 60612-7231, USA*

Further investigation of the aerial parts of *Alomia myriadenia* revealed the halimane diterpene *ent*-8*S*,12*S*-epoxy-7*R*,16-dihydroxyhalima-5(10),13-dien-15,16-olide along with two known labdanes, 6,7-methylenedioxycoumarin (ayapin), and kaempferol-7-methylether (rhamnocitrin). Cytotoxic and trypanocidal activities of the diterpenes were evaluated in vitro.



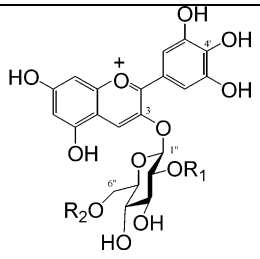
Phytochemistry, 2003, **64**, 1133

Flavonoid composition related to petal color in different lines of *Clitoria ternatea*

Kohei Kazuma, Naonobu Noda, Masahiko Suzuki

Division of Cell Engineering, Aomori Green BioCenter, 221-10 Nogi-Yamaguchi, Aomori, Aomori 030-0142, Japan

Flavonoids in the petals of different petal color lines in *Clitoria termatea* were investigated with LC/MS/MS. A new compound, delphinidin 3-*O*-(2″-*O*-α-rhamnosyl-6″-*O*-malonyl)-β-glucoside, was identified in a mauve petal line. While ternatins (3′,5′-disubstituted polyacylanthocyanins) were identified in all blue petal lines, the mauve petal line accumulated delphinidin 3-*O*-(6″-*O*-myl)-β-glucoside instead. The change in flower color from blue to mauve was due to the lack of substitutions at both 3′- and 5′-positions in the ternatins. Glucosylation at the 3′- and 5′-positions of anthocyanin might be a critical step for producing blue color in the petals of *C. ternatea*.



1 R_1=rhamnosyl, R_2=malonyl
2 R_1=H, R_2=malonyl
3 R_1=rhamnosyl, R_2=H
4 R_1=R_2=H

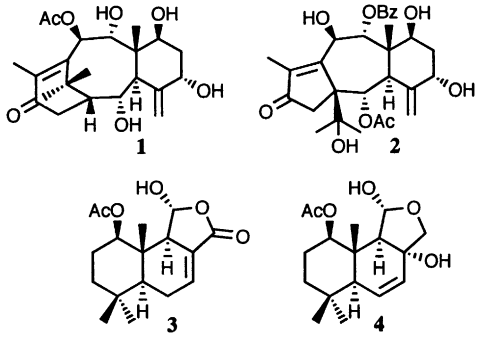
Phytochemistry, 2003, **64**, 1141

Diterpenes and sesquiterpenes from the bark of *Taxus yunnanensis*

Nhan Trung Nguyen[a], Arjun H. Banskota[a], Yasuhiro Tezuka[a], Takahiro Nobukawa[b], Shigetoshi Kadota[a]

[a]*Institute of Natural Medicine, Toyama Medical and Pharmaceutical University, 2630-Sugitani, Toyama 930-0194, Japan*
[b]*Changchun College of Traditional Chinese Medicine, 39 Gongnong Road, Changchun, China*

Two taxane-type diterpenes and two drimane-type sesquiterpenes were isolated from the bark of *Taxus yunnanensis* together with 35 known taxane-type diterpenes, a known drimane-type sesquiterpene and a known flavanone.



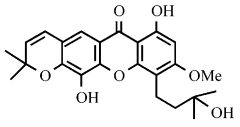
Phytochemistry, 2003, **64**, 1149

Xanthones from the stem bark of *Garcinia nigrolineata*

Vatcharin Rukachaisirikul[a], Thunwadee Ritthiwigrom[a], Athipol Pinsa[a], Prakart Sawangchote[b], Walter C. Taylor[c]

[a]*Department of Chemistry, Faculty of Science, Prince of Songkla University, Songkhla, 90112, Thailand*
[b]*Department of Biology, Faculty of Science, Prince of Songkla University, Songkhla, 90112, Thailand*
[c]*School of Chemistry, University of Sydney, NSW 2006, Australia*

Nine xanthones, nigrolineaxanthones A-1, together with nine known xanthones, were isoloated from the crude methanol extract of the stem bark of *Garcinia nigrolineata*. The structures were elucidated by analysis of the spectroscopic data, especially using 1D and 2D NMR data.



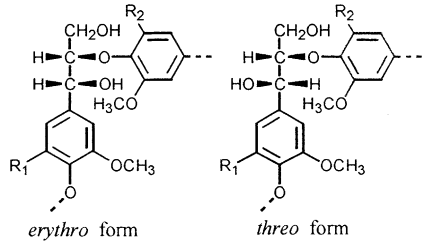
Phytochemistry, 2003, **64**, 1157

Ratio of *erthro* and *threo* forms of β-O-4 structures in tension wood lignin

Takuya Akiyama[a], Yuji Matsumoto[a], Takashi Okuyama[b], Gyosuke Meshitsuka[a]

[a]*Laboratory of Wood Chemistry, Department of Biomaterial Sciences, Graduate School of Agricultural and Life Sciences, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo 113-8657, Japan*
[b]*Laboratory of Biomaterial Physics, Graduate School of Bioagricultural Sciences, Nagoya University, Chikusa-ku, Nagoya 464-8601, Japan*

Investigation of *Liriodendron tulipifera* showed that the ratio of *erythro* form versus *threo* form in β-O-4 structures in lignin was higher in tension wood than in opposite wood and these ratios were correlated with the methoxyl group contents (correlation coefficient $R = 0.98$).



Phytochemistry, 2003, **64**, 1163

Evidence for cross-linking in tomato cutin using HR-MAS NMR spectroscopy

Ashish P. Deshmukh[a], André J. Simpson[b], Patrick G. Hatcher[a]

[a]*Department of Chemistry, The Ohio State University, 100, W. 18th Avenue, Columbus, OH 43210, USA*
[b]*Department of Physical and Environmental Sciences, The University of Toronto, Scarborough College, 1265 Military Trail, Toronto, Ontario, Canada M1C 1A4*

Structure of intact cutin from *Lycopersicon esculentum* fruit cuticle, swollen in DMSO, was determined using high-resolution magic angle spinning (HR-MAS) NMR spectroscopy, showing mainly esters, primary and secondary alcohols, fatty acids, and in addition, functionalities such as α-branched carboxylic acids, and esters of mid-chain alcohols showing possible cross-linking sites.