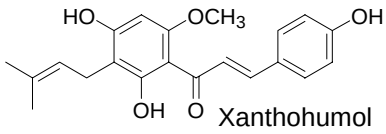
Xanthohumol and related prenylflavonoids from hops and beer: to your good health!

Phytochemistry, 2004, **65**, 1317

Jan F. Stevens [a], Jonathan E. Page [b]

[a] *Department of Chemistry and the Linus Pauling Institute, Oregon State University, 117 Weniger Hall, Corvallis, OR 97331, USA*
[b] *Plant Biotechnology Institute, National Research Council of Canada, 110 Gymnasium Place, Saskatoon, Sask., Canada S7N 0W9*



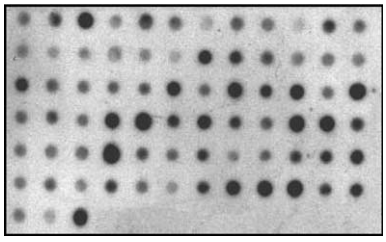
This review provides an overview of the chemistry, biological activities, and biotechnological aspects of xanthohumol, 8-prenylnaringenin, and other prenylated flavonoids from hops, *Humulus lupulus* L.

Expression analysis of the *Arabidopsis* peroxidase multigenic family

Phytochemistry, 2004, **65**, 1331

Luisa Valério, Mireille De Meyer, Claude Penel, Christophe Dunand

Laboratory of Plant Physiology, Department of Botany and Plant Biology, University of Geneva, quai Ernest-Ansermet 30, 1211 Geneva 4, Switzerland



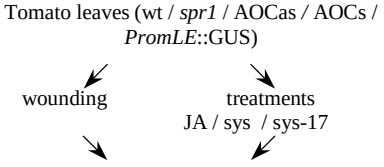
The expression of all *Arabidopsis* Class III peroxidase genes was analysed using specific macroarrays. Many genes were expressed differentially in roots, stems, leaves and flowers, including some genes with no reported ESTs. Our approach will allow an exhaustive study of this family in a wide range of conditions.

Wound-induced *RNaseLE* expression is jasmonate and systemin independent and occurs only locally in tomato (*Lycopersicon esculentum* cv. Lukullus)

Phytochemistry, 2004, **65**, 1343

Nadine Groß [a], Claus Wasternack [b], Margret Köck [a]

[a] *Biocenter, Martin Luther University Halle-Wittenberg, Weinbergweg 22, D-06120 Halle, Germany*
[b] *Department of Natural Product Biotechnology, Leibniz-Institute of Plant Biochemistry, Weinberg 3, D-06120 Halle, Germany*



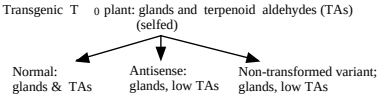
RNaseLE expression was analyzed by pharmacological studies of different tomato lines and upon wounding of leaves. The gene is only locally activated via a new type of wound-induced signaling pathway in a jasmonate/systemin-independent manner.

Terpenoid aldehyde formation and lysigenous gland storage sites in cotton: variant with mature glands but suppressed levels of terpenoid aldehydes

Phytochemistry, 2004, **65**, 1351

Chauncey R. Benedict [a], Gail S. Martin [b], Jinggao Liu [b], Lorraine Puckhaber [c], Clint W. Magill [d]

[a] *Professor Emeritus of Biochemistry, TAMU, College Station, TX 77843, USA*
[b] *Department of Biochemistry and Biophysics, TAMU, College Station, TX 77843, USA*
[c] *USDA-ARS, Southern Plains Agricultural Research Center, 2765 F & B Road, College Station, TX 77845, USA*
[d] *Department of Plant Pathology and Microbiology, TAMU, College Station, TX 77843, USA*



A cotton variant with reduced levels of terpenoid aldehydes has suppressed synthesis of sesquiterpenoids and sesterterpenoids without interfering with gland morphogenesis.

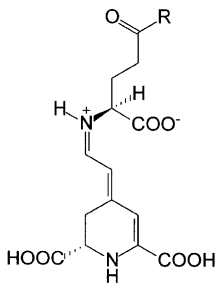
Betaxanthin formation and free amino acids in hairy roots of *Beta vulgaris* var. *lutea* depending on nutrient medium and glutamate or glutamine feeding

Phytochemistry, 2004, **65**, 1361

Hartmut Böhm [a], Gisela Mäck [b,c]

[a] *Deutsches Institut für Ernährungsforschung, Arthur-Scheunert-Allee 114-116, D-14558 Bergholz-Rehbrücke, Germany*
[b] *The Royal Veterinary and Agricultural University (KVL), Plant Nutritional Laboratory, Thorvaldsensvej 40, DK-1871 Frederiksberg C, Copenhagen, Denmark*
[c] *Institut für Zuckerrübenforschung (IfZ), Holtenser Landstrasse 77, D-37079 Göttingen, Germany*

The preferred formation of vulgaxanthin I over vulgaxanthin II after feeding of (*S*)-glutamate is not only due to the rapid metabolization of glutamate. Even when accumulated, glutamate and also 4-aminobutyric acid react less with betalamic acid than glutamine.



Vulgaxanthin I, R = NH_2
Vulgaxanthin II, R = OH

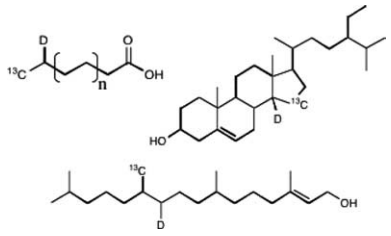
Hydrogen and carbon isotopic fractionations of lipid biosynthesis among terrestrial (C3, C4 and CAM) and aquatic plants

Phytochemistry, 2004, **65**, 1369

Yoshito Chikaraishi [a], Hiroshi Naraoka [a], Simon R. Poulson [b]

[a] *Department of Chemistry, Tokyo Metropolitan University, 1-1, Minami-Ohsawa, Hachioji, Tokyo 192-0397, Japan*
[b] *Department of Geological Science, MS-172, University of Nevada-Reno, Reno, NV 89557-0138, USA*

Compound-specific hydrogen and carbon isotopic compositions in representative lipid biomolecules (*n*-alkanoic acids, phytol and sterols) associated with three biosynthetic pathways (acetogenic, methylerythritol phosphate and mevalonic-acid, respectively) have been determined for various plant classes: terrestrial C3, C4 and CAM, and aquatic C3 plants.



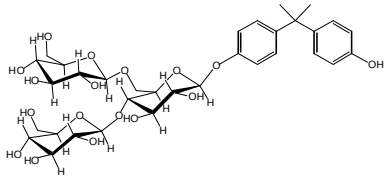
Glycosylation of bisphenol A by tobacco BY-2 cells

Phytochemistry, 2004, **65**, 1383

Nobuyoshi Nakajima, Yukiko Oshima, John S. Edmonds, Masatoshi Morita

National Institute for Environmental Studies, 16-2 Onogawa, Tsukuba, Ibaraki 305-8506, Japan

Tobacco BY-2 cells in suspension culture transformed bisphenol A to its mono-*O*-β-D-gentiobioside and a mono-*O*-β-triglucopyranoside as well as mono- and di-*O*-β-D-glucopyranosides.



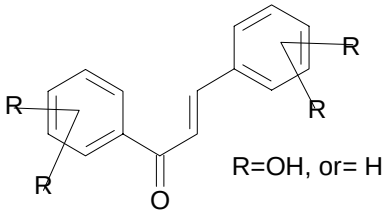
Chalcones as potent tyrosinase inhibitors: the effect of hydroxyl positions and numbers

Phytochemistry, 2004, **65**, 1389

Ohad Nerya [a], Ramadan Musa [a], Soliman Khatib [a,b], Snait Tamir [a,b], Jacob Vaya [a,b]

[a] *Laboratory of Natural Medicinal Compounds, Migal – Galilee Technological Center, P.O. Box 831, Kiryat Shmona 11016, Israel*
[b] *Department of Biotechnology and Environmental Science, Tel-Hai Academic College, Israel*

Chalcones with non-, mono-, di-, tri-, or tetra-substituted hydroxyl groups were examined as new family of tyrosinase inhibitors, demonstrating their potential whitening potency.



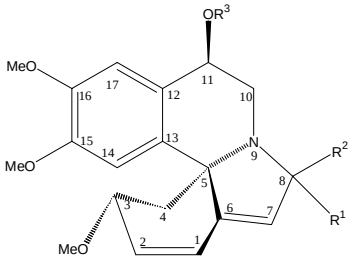
Erythrinaline alkaloids from the flowers and pods of *Erythrina lysistemon* and their DPPH radical scavenging properties

Phytochemistry, 2004, **65**, 1397

Benard F. Juma, Runner R.T. Majinda

Department of Chemistry, University of Botswana, Private Bag UB 00704, Gaborone, Botswana

Four new erythrinaline alkaloids (**1**, **2**, **4**, **8**) were isolated from the flowers and pods of *Erythrina lysistemon* along with 10 known alkaloids, five for the first time in the species and the rest having been re-isolated. In our work we got two sets of C-11 epimers **3**, **4** and **8**, **9** and this enabled correct identification of two compounds that were earlier misidentified. Though the crude flower extract showed moderate brine shrimp toxicity, surprisingly, none of the isolated compounds exhibited any activity below 100 ppm. Only compounds **11** and **12** showed appreciable radical scavenging properties in both the TLC and spectrophotometric DPPH assays.



1: R^1+ R^2= O=; R^3= H
2: R^1+ R^2= O=; R^3= Me
8: R^1=R^2=R^3 = H
4: N-oxide of **8**

Plant-growth inhibitory activity of heliannuol derivatives

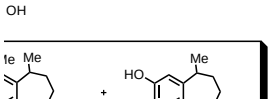
Phytochemistry, 2004, **65**, 1405

Fuminao Doi [a], Taiga Ohara [a], Takahisa Ogamino [a], Takeshi Sugai [a], Keiko Higashinakasu [b], Kosumi Yamada [b], Hideyuki Shigemori [b], Koji Hasegawa [b], Shigeru Nishiyama [a]

[a] *Department of Chemistry, Faculty of Science and Technology, Keio University, Hiyoshi 3-14-1, Kohoku-ku, Yokohama 223-8522, Japan*

[b] *Institute of Applied Biochemistry, University of Tsukuba, Tennoudai 1-1-1, Tsukuba 305-0044, Japan*

Chroman and tetrahydro-oxepin derivatives related to heliannuols were submitted to an assessment of plant-growth inhibitory activity.



Evaluation of the mass spectrometric fragmentation of codeine and morphine after ^{13}C-isotope biosynthetic labeling

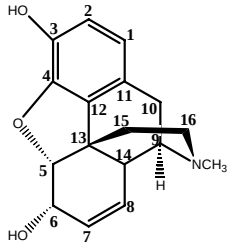
Phytochemistry, 2004, **65**, 1413

Chotima Poeaknapo [a], Ursula Fisinger [a], Meinhart H. Zenk [a], Jürgen Schmidt [b]

[a] *Biozentrum Universität Halle, Weinbergweg 22, D-06120 Halle/S., Germany*

[b] *Leibniz-Institut für Pflanzenbiochemie, Abteilung Natur- und Wirkstoffchemie, Weinberg 3, D-06120 Halle/S., Germany*

All major fragment ions of codeine and morphine were elucidated using LC–electrospray MS/MS and high resolution FT-ICR-MS combined with an IRMPD system.



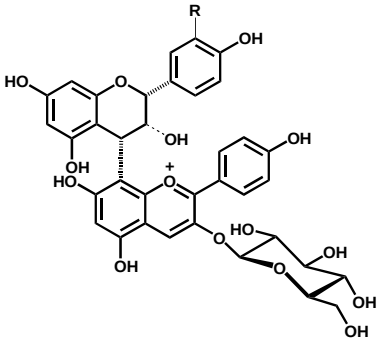
Dimeric anthocyanins from strawberry (*Fragaria ananassa*) consisting of pelargonidin 3-glucoside covalently linked to four flavan-3-ols

Phytochemistry, 2004, **65**, 1421

Torgils Fossen, Saleh Rayyan, Øyvind M. Andersen

Department of Chemistry, University of Bergen, Allégt. 41, N-5007 Bergen, Norway

Four flavan-3-ol(4α → 8)pelargonidin 3-*O*-β-glucopyranosides were isolated in minor amounts from strawberry extract. Each of these purple pigments occurred in NMR solvent as a pair of rotamers.



Phytochemistry, 2004, **65**, 1429

Rhamnogalacturonan I in *Solanum tuberosum* tubers contains complex arabinogalactan structures

Jens Øbro [a], Jesper Harholt [b], Henrik Vibe Scheller [b], Caroline Orfila [b]

[a] *Biotechnology Group, Danish Institute of Agricultural Sciences, Thorvaldsensvej 40, 1871 Frederiksberg C, Denmark*

[b] *Plant Biochemistry Laboratory, Department of Plant Biology, The Royal Veterinary and Agricultural University, Thorvaldsensvej 40, 1871 Frederiksberg C, Denmark*

A rhamnogalacturonan I polysaccharide from potato tuber cell walls and isolated and characterised by enzymatic digestion with different pectinases. In addition, a novel and rapid method for the determination of common cell wall monosaccharides using high-performance anion exchange chromatography with pulsed amperometric detection is described.