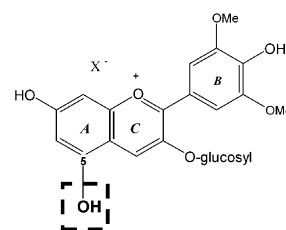


Why are grape/fresh wine anthocyanins so simple and why is it that red wine color lasts so long?

R. Brouillard, S. Chassaing, A. Fougerousse

Laboratoire de Chimie des Polyphénols, Université Strasbourg I, UMR CNRS 7509, Faculté de Chimie, 1 rue Blaise Pascal, 67 Strasbourg, France

Red wine ageing is related to the presence of a phloroglucinol A-ring in the grape anthocyanin structures. Especially important is the existence of the 5-OH.



Phytochemistry, 2003, **64**, 1179

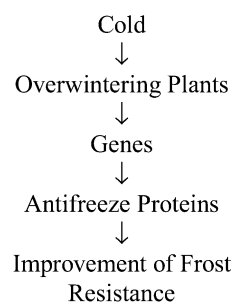
Antifreeze proteins in higher plants

Ökkeş Atıcı^a, Barbaros Nalbantoğlu^b

^aDepartment of Biology, Faculty of Science and Arts, Atatürk University, 25240 Erzurum, Turkey

^bDepartment of Chemistry, Faculty of Science and Arts, Atatürk University, 25240 Erzurum, Turkey

Physiological and biochemical roles of antifreeze proteins (AFPs) are important to protect the plant tissues from mechanical stress caused by ice formation. Several AFPs and five full-length AFP cDNAs have been isolated, cloned and characterized in higher plants.



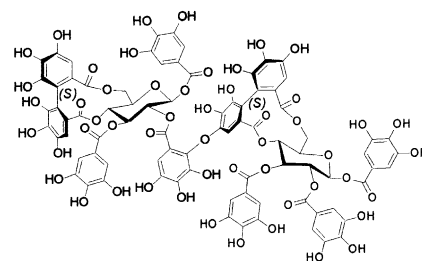
Phytochemistry, 2003, **64**, 1187

Ellagitannin biosynthesis: laccase-catalyzed dimerization of tellimagrandin II to cornusiin E in *Tellima grandiflora*

Ruth Niemetz, Georg G. Gross

Molekulare Botanik, Universität Ulm, D-89069 Ulm, Germany

A new laccase (EC 1.10.3.2)-type phenol oxidase has been purified from leaves of *Tellima grandiflora* (fringe cups, Saxifragaceae) that catalyzed the O₂-dependent coupling of two tellimagrandin II molecules to the dimeric ellagitannin, cornusiin E.



Phytochemistry, 2003, **64**, 1197

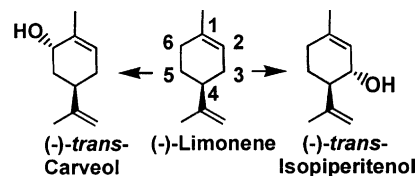
Molecular evaluation of a spearmint mutant altered in the expression of limonene hydroxylases that direct essential oil monoterpene biosynthesis

Cinzia Berteau, Michel Schalk, Christopher J.D. Mau, Frank Karp, Mark R. Wildung, Rodney Croteau

Institute of Biological Chemistry, Washington State University, 385 Clark Hall, Pullman, WA 99164-6340, USA

An irradiation-induced Scotch spearmint mutant produces C3-oxygenated *p*-menthane monoterpenes instead of the typical C6-oxygenated monoterpenes. Isolation of the responsible cytochrome P450 limonene hydroxylases suggested that the defect most likely resides in a regulatory gene that directs expression of the regiospecific hydroxylases.

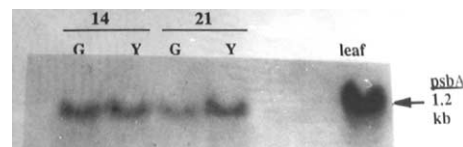
Phytochemistry, 2003, **64**, 1203



Expression of plastid-encoded photosynthetic genes during chloroplast or chromoplast differentiation in *Cucurbitae pepo* L. fruits

Phytochemistry, 2002, **64**, 1213Silas D. Obukosia^a, Chris M. Richards^b, Charles D. Boyer^c^aDepartment of Crop Science, University of Nairobi, PO Box 30197, Nairobi, Kenya^bDepartment of Horticulture, Pennsylvania State University, 215 Tyson, PA 16802, USA^cDepartment of Horticulture, 4017 Agriculture and Life Sciences Building, Oregon State University, Corvallis, OR 97331-7304, USA

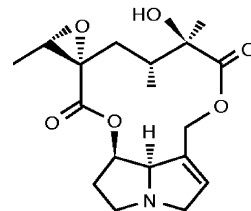
There were only small differences in expression of *rbcL* and *psbA* genes in fruit cells with either chloroplast (G at 14 and 21 days) or chromoplast (Y); if any photosynthetic genes were expressed at higher levels in developing chromoplasts.



Pyrrolizidine alkaloids in and on the leaf surface of *Senecio jacobaea* L.

Phytochemistry, 2003, **64**, 1223Klaas Vrieling^a, Sylvie Derridj^b^aInstitute of Biology, Leiden University, Section Plant Ecology, PO Box 9516, 2300 RA Leiden, The Netherlands^bInstitut National de Recherche Agronomique (INRA), Unité de Phytopharmacie et des Médiateurs Chimiques, Route de Saint-Cyr, F-78026 Versailles Cedex, France

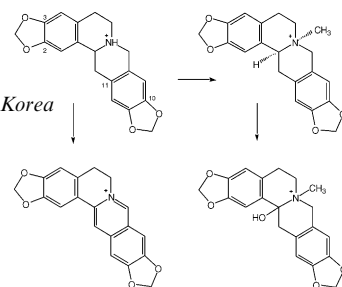
Pyrrolizidine alkaloids (PAs) were detected on the leaf surface from *Senecio jacobaea*. PA concentration on the leaves was correlated with PA concentration of the total leaf tissues. The PA spectrum on the leaf differed from the PA spectrum of the total leaf.



LC–NMR and LC–MS analysis of 2,3,10,11-oxygenated protoberberine metabolites in *Corydalis* cell cultures

Phytochemistry, 2003, **64**, 1229Kinuko Iwasa^a, Ayako Kuribayashi^a, Makiko Sugiura^a, Masataka Moriyasu^a, Dong-Ung Lee^b, Wolfgang Wiegand^c^aKobe Pharmaceutical University, 4-19-1 Motoyamakita, Higashinada-ku, Kobe 658-8558, Japan^bDepartment of Biochemistry, College of Natural Science, Dongguk University, Kyongju 780-714, South Korea^cInstitute of Pharmacy, Regensburg University, D-93040 Regensburg, Germany

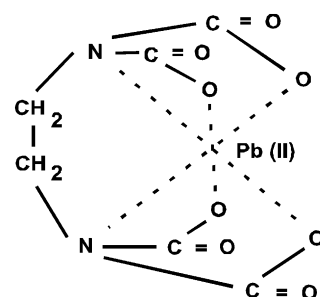
Administration experiments of 2,3,10,11-oxygenated protoberberine alkaloids were undertaken in cell cultures of *Corydalis* species. Without isolation, the structures of the metabolites were determined by LC–MS and LC–NMR analyses. Metabolic pathways of these types of alkaloids were demonstrated with some identified for the first time.



Enhancing phytoremediative ability of *Pisum sativum* by EDTA application

Phytochemistry, 2003, **64**, 1239Aneta Piechalak^a, Barbara Tomaszewska^a, Danuta Barańkiewicz^b^aDepartment of Biochemistry, A. Mickiewicz University, Fredry 10, 61-701 Poznań, Poland^bDepartment of Analysis of Water and Soil, A. Mickiewicz University, Drzymala 24, 60-613 Poznań, Poland

This study focuses on lead accumulation of pea plants grown hydroponically in Hoagland medium supplemented with 1 mM Pb(NO₃)₂ + 0.5 mM or 1 mM EDTA.



Synthesis and anti-herpes simplex viral activity of monoglycosyl diglycerides

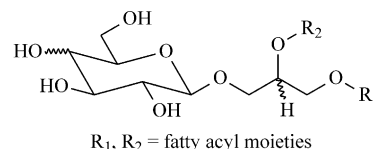
Phytochemistry, 2003, **64**, 1253

Wicharn Janwitayanuchit^a, Khanit Suwanborirux^a, Chamnan Patarapanich^a, Sunibhond Pummangura^a, Vimolmas Lipipun^a, Tirayut Vilaivan^b

^aFaculty of Pharmaceutical Sciences, Chulalongkorn University Bangkok, 10330, Thailand

^bFaculty of Science, Chulalongkorn University, Bangkok, 10330, Thailand

A series of mono-acid and mixed-acid monoglycosyl diglycerides bearing either glucose or galactose were synthesized, and preliminary structure–activity relationships against herpes simplex virus have been reported.



Isoflavonoids from *Dalbergia oliveri*

Phytochemistry, 2003, **64**, 1265

Chihiro Ito^a, Masataka Itoigawa^b, Tetsufumi Kanematsu^a, Nijisiri Ruangrungrasi^c, Teruo Mukainaka^d, Harukuni Tokuda^d, Hoyoku Nishino^d, Hiroshi Furukawa^a

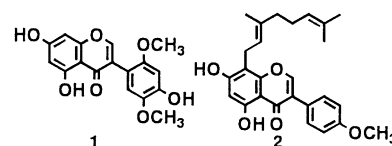
^aFaculty of Pharmacy, Meijo University, Tempaku, Nagoya 468-8503, Japan

^bTokai Gakuen University, Miyoshi, Aichi 470-0207, Japan

^cDepartment of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, Bangkok 10330, Thailand

^dDepartment of Molecular Biochemistry, Kyoto Prefectural University of Medicine, Kamigyoku-ku, Kyoto 602-0841, Japan

Two isoflavonoids, named oblibergin A (**1**) and B (**2**) were isolated from the stem bark of *Dalbergia oliveri* (Leguminosae). Along with three previously known compounds, they are inhibitors of Epstein–Barr virus early antigen activation induced by 12-*O*-tetradecanoyl-phorbol-13-acetate in Raji cells. Their structures were elucidated on the basis of spectroscopic analyses.



Composition and anti-plasmodial activities of essential oils from some Cameroonian medicinal plants

Phytochemistry, 2003, **64**, 1269

Fabrice Fekam Boyom^a, Vincent Ngouana^a, Paul Henri Amvam Zollo^b, Chantal Menuet^c, Jean Marie Bessiere^d, Jiri Gut^e, Philip J. Rosenthal^e

^aDepartment of Biochemistry, Faculty of Science, University of Yaoundé I, Cameroon

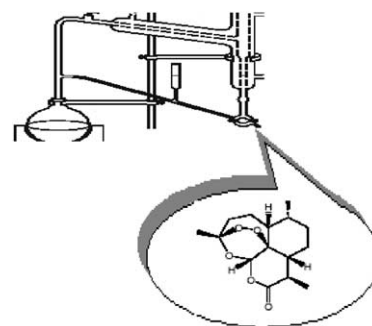
^bDepartment of Biochemistry, Faculty of Science, University of Douala, Cameroon

^cLaboratoire de Chimie Biomoléculaire, UMR 5032, ENSCM, Montpellier, France

^dLaboratoire de Phytochimie, ENSCM, Montpellier, France

^eDivision of Infectious Diseases, Department of Medicine, University of California San Francisco, San Francisco General Hospital, 1001 Potrero Avenue, San Francisco, CA 94100, USA

The anti-plasmodial activity of artemisinin suggests that other potent sesquiterpenes can be found in essential oils.



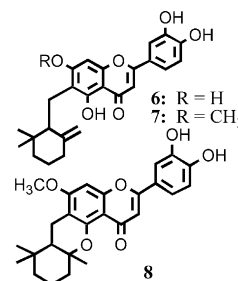
Antioxidant flavonoids from the rhizomes of *Helminthostachys zeylanica*

Phytochemistry, 2003, **64**, 1277

Yu-Ling Huang, Pei-Yu Yeh, Chien-Chang Shen, Chien-Chih Chen

National Research Institute of Chinese Medicine, No. 155-1, Sec. 2, Li Nung St. Peitou, Taipei, Taiwan, Republic of China

Eight flavonoids, ugonins E–L (**1**–**8**), were isolated from the rhizomes of *Helminthostachys zeylanica*. Compounds **3**–**8** were evaluated for their antioxidative activity in the 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay. Compounds **6**, **7** and **8** were more active than Trolox, with IC₂₀ values of 5.29 ± 0.32, 7.23 ± 0.22 and 7.93 ± 0.31, respectively.



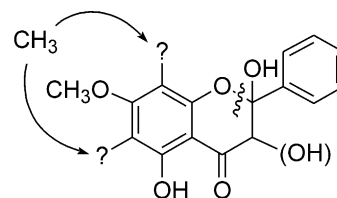
2-Hydroxyflavanones from *Leptospermum polygalifolium* subsp. *polygalifolium* Equilibrating sets of hemiacetal isomers

Kamarul'Ain Mustafa^a, Nigel B. Perry^b, Rex T. Weavers^a

^aDepartment of Chemistry, University of Otago, PO Box 56, Dunedin, New Zealand

^bPlant Extracts Research Unit, New Zealand Institute for Crop and Food Research Limited, Department of Chemistry, University of Otago, PO Box 56, Dunedin, New Zealand

6 and 8-Methyl-2,5-dihydroxy and 2,3,5-trihydroxyflavanones exist as equilibrating mixtures in solution.



Phytochemistry, 2003, **64**, 1285

Acylated flavone glycosides from *Veronica*

Dirk C. Albach^a, Renée J. Grayer^b, Søren Rosendal Jensen^c, Fevzi Özgökce^d, Nigel C. Veitch^b

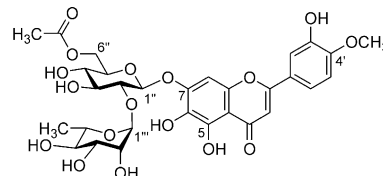
^aDepartment of Higher Plant Systematics, Institute of Botany, University of Vienna, Austria

^bRoyal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, UK

^cDepartment of Chemistry, The Technical University of Denmark, DK-2800 Lyngby, Denmark

^dDepartment of Biology, Faculty of Science and Arts, Yüzüncü Yıl University, 65080 Van, Turkey

Two new and two known acylated flavone glycosides are described from *Veronica* species together with some known iridoid glucosides.



Phytochemistry, 2003, **64**, 1295

α -Pyrones and a 2(5H)-furanone from *Hyptis pectinata*

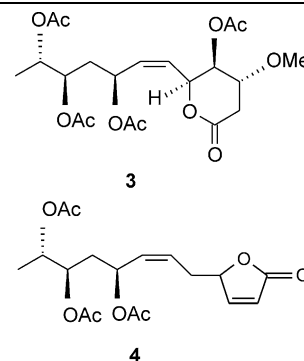
Dionne M. Boalino^a, Joseph D. Connolly^b, Stewart McLean^c, William F. Reynolds^c, Winston F. Tinto^a

^aDepartment of Biological and Chemical Sciences, University of the West Indies, Cave Hill Campus, PO Box 64, Bridgetown, Barbados

^bDepartment of Chemistry, Glasgow University, Glasgow G12 8QQ, UK

^cDepartment of Chemistry, University of Toronto, Toronto, Ontario, Canada M5S 3H6

Three α -pyrones (**1–3**) and one 2(5H)-furanone (**4**), designated pectinolides D–G, are new polyketides that have been isolated from the aerial parts of *Hyptis pectinata*.



Phytochemistry, 2003, **64**, 1303

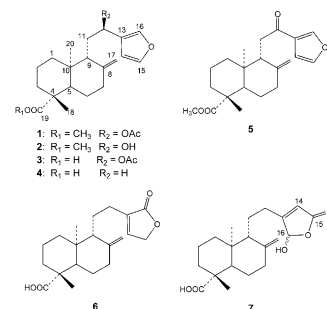
ent-Labdane diterpenes from the aquatic plant *Potamogeton pectinatus*

Patrice Waridel^a, Jean-Luc Wolfender^a, Jean-Bernard Lachavanne^b, Kurt Hostettmann^a

^aInstitut de Pharmacognosie et Phytochimie, Université de Lausanne, CH-1015 Lausanne, Switzerland

^bLaboratoire d'Ecologie et de Biologie Végétale Aquatique, Université de Genève, Ch. des Clochettes 18, CH-1206 Genève, Switzerland

Four new *ent*-labdanes diterpenes and two known furano-*ent*-labdanes were isolated from *Potamogeton pectinatus*.



Phytochemistry, 2003, **64**, 1309