

## Mechanistic characterization of $\omega$ -3 desaturation in the green alga *Chlorella vulgaris*

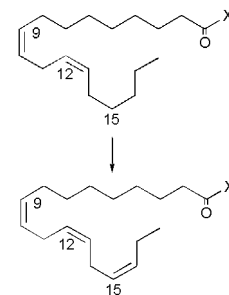
Franck Daligault<sup>a</sup>, Darwin W. Reed<sup>b</sup>, Christopher K. Savile<sup>c</sup>, Caroline Nugier-Chauvin<sup>a</sup>, Henri Patin<sup>a</sup>, Patrick S. Covello<sup>b</sup>, Peter H. Buist<sup>c</sup>

<sup>a</sup>Laboratoire de Chimie des Biomolécules et des Systèmes Organisés, CNRS UMR 6052, Ecole Nationale Supérieure de Chimie de Rennes, Ave du Gal Leclerc, 35700 Rennes Beaulieu, France

<sup>b</sup>Plant Biotechnology Institute, 110 Gymnasium Place, Saskatoon, SK, Canada S7N 0W9

<sup>c</sup>Department of Chemistry, Carleton University, 1125 Colonel By Drive, Ottawa, ON, Canada K1S 5B6

The final desaturase-mediated step in the biosynthesis of  $\alpha$ -limolenate as it occurs in *Chlorella vulgaris* is initiated at C-15 as determined by KIE measurements.



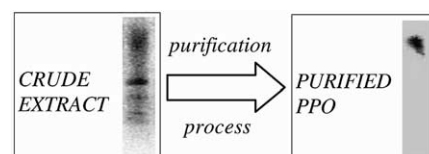
Phytochemistry, 2003, **63**, 739

## Purification of a polyphenol oxidase isoform from potato (*Solanum tuberosum*) tubers

Costanza Marri, Alessandra Frazzoli, Alejandro Hochkoepler, Valeria Poggi

Department of Industrial Chemistry, University of Bologna, Viale Risorgimento 4, I-40136 Bologna, Italy

A PPO isoform has been purified from dormant potato tubers in relation to the study of the expression of the enzyme.



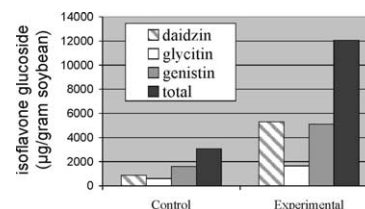
Phytochemistry, 2003, **63**, 745

## Metabolic engineering to increase isoflavone biosynthesis in soybean seed

Oliver Yu, June Shi, Aileen O. Hession, Carl A. Maxwell, Brian McGonigle, Joan T. Odell

E.I. du Pont de Nemours & Company, Inc., Crop Genetics, Experimental Station, PO Box 80402, Wilmington, DE 19880-0402, USA

The combination of transcription factor-driven gene activation and suppression of a competing pathway enhances accumulation of isoflavones in soybeans.



Phytochemistry, 2003, **63**, 753

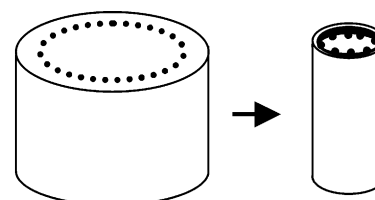
## Lignification in relation to the biennial growth habit in brassicas

B.W. Evans<sup>a,b</sup>, C.E. Snape<sup>b</sup>, M.C. Jarvis<sup>a</sup>

<sup>a</sup>Chemistry Department, Glasgow University, Glasgow G12 8QQ, Scotland, UK

<sup>b</sup>Department of Pure & Applied Chemistry, Strathclyde University, Glasgow G1 1XL, Scotland, UK

Lignin content and composition were determined by solid-state <sup>13</sup>C NMR spectroscopy in vascular cell walls of brassica stems during the first and second seasons of growth.



Phytochemistry, 2003, **63**, 765

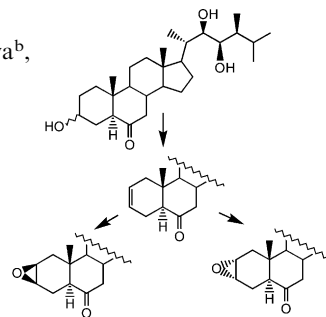
## Biosynthesis of 2,3-epoxybrassinosteroids in seedlings of *Secale cereale*

Andrey P. Antonchick<sup>a,b</sup>, Bernd Schneider<sup>a</sup>, Vladimir N. Zhabinskii<sup>b</sup>, Olga V. Konstantinova<sup>b</sup>, Vladimir A. Khrpach<sup>b</sup>

<sup>a</sup>Max-Planck-Institute for Chemical Ecology, Beutenberg Campus, Winzerlaer Str. 10, D-07745 Jena, Germany

<sup>b</sup>Institute of Bioorganic Chemistry, National Academy of Sciences of Belarus, Kuprevich Str. 5/2, 220141 Minsk, Belarus

The biosynthesis of 2,3-epoxybrassinosteroids from teasterone/typhasterol via a novel 2,3-olefinic steroid intermediate, secasterol, has been established by feeding experiments using deuterated precursors and GC–MS–SIM analysis of boronated biosynthetic products.



Phytochemistry, 2003, **63**, 771

## Understory light and root ginsenosides in forest-grown *Panax quinquefolius*

Anick R. Fournier<sup>a</sup>, John T.A. Proctor<sup>b</sup>, Louis Gauthier<sup>c</sup>, Shahrokh Khanizadeh<sup>d</sup>, André Bélanger<sup>d</sup>, André Gosselin<sup>a</sup>, Martine Dorais<sup>e</sup>

<sup>a</sup>Horticultural Research Centre, Environtron Building, Laval University, Quebec, Canada G1K 7P4

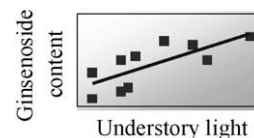
<sup>b</sup>Department of Plant Agriculture, University of Guelph, Guelph, Ontario, Canada N1G 2W1

<sup>c</sup>Les Fraises de l'Île d'Orléans Inc., Île d'Orléans, Québec, Canada G0A 3Z0

<sup>d</sup>Agriculture and Agri-Food Canada, Horticultural Research and Development Centre, Saint-Jean-sur-Richelieu, Québec, Canada J3B 3E6

<sup>e</sup>Agriculture and Agri-Food Canada, Horticultural Research Centre, Environtron Building, Laval University, Quebec, Canada G1K 7P4

Relationship between understory light and content of six ginsenosides in American ginseng roots was determined.



Phytochemistry, 2003, **63**, 777

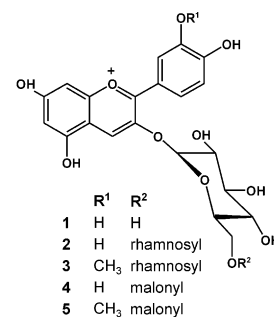
## Anthocyanins from flowers of the orchids *Dracula chimaera* and *D. cordobae*

Torgils Fossen<sup>a</sup>, Dag Olav Øvstedal<sup>b</sup>

<sup>a</sup>Department of Chemistry, University of Bergen, Allégt. 41, N-5007 Bergen, Norway

<sup>b</sup>Department of Botany, University of Bergen, Allégt. 41, N-5007 Bergen, Norway

The 3-*O*-(6''-*O*-malonyl- $\beta$ -glucopyranoside) of cyanidin and peonidin, respectively, have been isolated from acidified, methanolic extracts of *Dracula chimera* and *D. cordobae*.



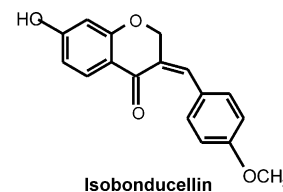
Phytochemistry, 2003, **63**, 783

## Flavanoids from *Caesalpinia pulcherrima*

K.V.N.S. Srinivas, Y. Koteswara Rao, I. Mahender, Biswanath Das, K.V.S. Rama Krishna, K. Hara Kishore, U.S.N. Murty

Indian Institute of Chemical Technology, Hyderabad-500 007, India

Two new flavanoids, 5,7-dimethoxy-3',4'-methylenedioxyflavanone and isobonducellin along with 2'-hydroxy-2,3,4',6'-tetramethoxychalcone, 5,7-dimethoxyflavanone and bonducellin were isolated from the aerial parts of *Caesalpinia pulcherrima*. Antimicrobial activity of the new compounds was also evaluated.



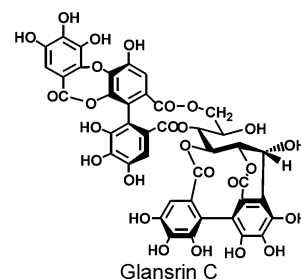
Phytochemistry, 2003, **63**, 789

## Antioxidative polyphenols from walnuts (*Juglans regia* L.)

Toshiyuki Fukuda, Hideyuki Ito, Takashi Yoshida

Faculty of Pharmaceutical Sciences, Okayama University, Tsushima, Okayama 700-8530, Japan

From walnuts (the seeds of *Juglans regia*), three ellagitannins, glansrins A–C, have been isolated together with 13 known hydrolysable tannins, and their structures elucidated by means of 1D and 2D NMR analyses. Their antioxidative effects were also evaluated.



Phytochemistry, 2003, **63**, 795

## Insecticidal pyrido[1,2-*a*]azepine alkaloids and related derivatives from *Stemona* species

Elisabeth Kaltenecker<sup>a</sup>, Brigitte Brem<sup>a</sup>, Kurt Mereiter<sup>b</sup>, Hermann Kalchauer<sup>c</sup>, Hanspeter Kählig<sup>c</sup>, Otmar Hofer<sup>c</sup>, Srummy Vajrodaya<sup>d</sup>, Harald Greger<sup>a</sup>

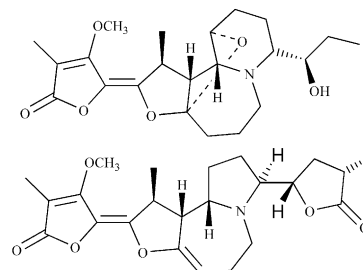
<sup>a</sup>Comparative & Ecological Phytochemistry Department, Institute of Botany, University of Vienna, Rennweg 14, A-1030 Vienna, Austria

<sup>b</sup>Department of Chemistry, Vienna University of Technology, Getreidemarkt 9/164SC, A-1060 Vienna, Austria

<sup>c</sup>Institute of Organic Chemistry, University of Vienna, Währingerstrasse 38, A-1090 Vienna, Austria

<sup>d</sup>Department of Botany, Faculty of Science, Kasetsart University, Bangkok 10900, Thailand

Eight new pyrido- and pyrroloazepine alkaloids from four *Stemona* species were identified. Insecticidal activities of 13 derivatives were compared.



Phytochemistry, 2003, **63**, 803

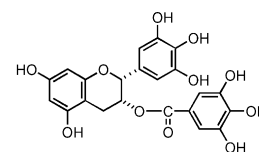
## Size exclusion chromatographic analysis of polyphenol–serum albumin complexes

Tsutomu Hatano<sup>a</sup>, Mami Hori<sup>a</sup>, Richard W. Hemingway<sup>b</sup>, Takashi Yoshida<sup>a</sup>

<sup>a</sup>Faculty of Pharmaceutical Sciences, Okayama University, Tsushima, Okayama 700-8530, Japan

<sup>b</sup>Plant Polyphenols LLC, PO Box 12522, Alexandria, LA 71315, USA

Water-soluble complex of (–)-epigallocatechin gallate and bovine serum albumin, and those of several other combinations were analyzed by size exclusion chromatography.



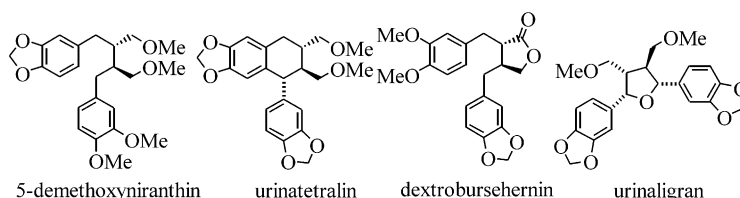
Phytochemistry, 2003, **63**, 817

## Lignans from *Phyllanthus urinaria*

Chia-Chuan Chang, Yu-Chin Lien, Karin C.S. Chen Liu, Shoei-Sheng Lee

School of Pharmacy, College of Medicine, National Taiwan University, Taipei 100, Taiwan, ROC

Four lignans were isolated from *Phyllanthus urinaria* L. and were characterized by spectral analysis and chemical correlation.



## Eudesmane and megastigmane glucosides from *Laggera alata*

Phytochemistry, 2003, **63**, 835

Qunxiong Zheng<sup>a,c</sup>, Zhaojun Xu<sup>a</sup>, Xianfeng Sun<sup>b</sup>, Wei Yao<sup>a</sup>, Handong Sun<sup>b</sup>, Christopher H. K. Cheng<sup>d</sup>, Yu Zhao<sup>a</sup>

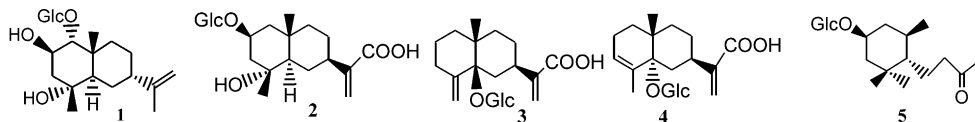
<sup>a</sup>Department of Traditional Chinese Medicine and Natural Drug Research, College of Pharmaceutical Sciences, Zhejiang University, Hangzhou 310031, China

<sup>b</sup>Kunming Institute of Botany, Chinese Academy of Sciences, Kunming 650204, China

<sup>c</sup>Department of Food Science, Institute of Hangzhou Commerce, Hangzhou 310035, China

<sup>d</sup>Department of Biochemistry, The Chinese University of Hong Kong, Shatin, N. T., Hong Kong, China

Four eudesmane and one megastigmane glucosides, alatoside A–D (**1–5**), were isolated from *Laggera alata*.



## Stigmastane derivatives and isovaleryl sucrose esters from *Vernonia guineensis* (Asteraceae)

Phytochemistry, 2003, **63**, 841

Alembert T. Tchinda<sup>a</sup>, Pierre Tane<sup>a</sup>, Johnson F. Ayafor<sup>a</sup>, Joseph D. Connolly<sup>b</sup>

<sup>a</sup>Department of Chemistry, University of Dschang, Box 67, Dschang, Cameroon

<sup>b</sup>Chemistry Department, The University of Glasgow, Scotland G12 8QQ, UK

Two isovaleryl sucrose esters have been isolated from the stem bark of *Vernonia guineensis* together with two stigmastane derivatives, vernoguinoside and vernoguinoesterone. Their structures were assigned on the basis of their spectroscopic properties.

