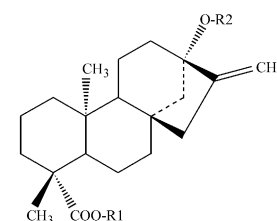


Stevioside

Jan M.C. Geuns

Laboratory of Plant Physiology, Catholic University of Leuven, Kasteelpark Arenberg 31, B 3001 Leuven, Belgium

Stevioside is a natural sweetener extracted from leaves of *Stevia rebaudiana* (Bertoni) Bertoni. The occurrence of the sweeteners, their biosynthetic pathway and toxicological aspects are discussed. The metabolism of stevioside is discussed in relation with the possible formation of steviol. The conclusion is that *Stevia* and stevioside are safe when used as a sweetener.



R1 = β -Glu

R2 = β -Glu- β -Glu(2 \rightarrow 1)

Phytochemistry, 2003, **64**, 913

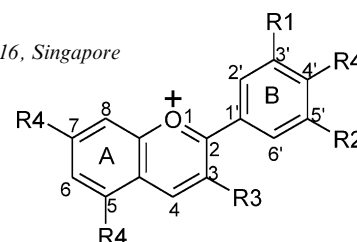
Analysis and biological activities of anthocyanins

Jin-Ming Kong^a, Lian-Sai Chia^a, Ngoh-Khang Goh^a, Tet-Fatt Chia^a, R. Brouillard^b

^aNational Institute of Education, Nanyang Technological University, 1 Nanyang Walk, Singapore 637616, Singapore

^bInstitut de Chimie, Universite Louis Pasteur, 1 rue Blaise Pascal, Strasbourg 67008, France

Anthocyanins are naturally occurring compounds imparting color to plants, and are probably the most important group of visible plant pigments besides chlorophyll. Furthermore, they also contain an array of health-promoting benefits. However, anthocyanins have received less attention than other flavonoids, despite their far-reaching effects. In this paper, the biological functions, pre-clinical studies, and the most recent analytical techniques for anthocyanin isolation and identification were reviewed.



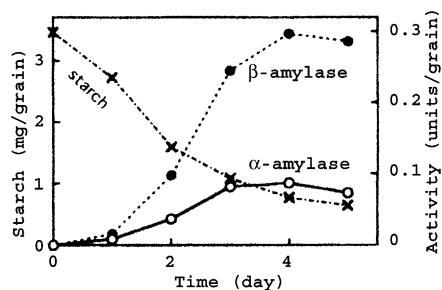
Phytochemistry, 2003, **64**, 923

β -Amylase in germinating millet seeds

Yoshiki Yamasaki

Research Institute for Bioresources, Okayama University, Kurashiki-shi, Okayama 710-0046, Japan

β -Amylase digested starch 2.5-fold faster than α -amylase, pullulanase and α -glucosidase.



Phytochemistry, 2003, **64**, 935

Effect of salt stress on the metabolism of ethanolamine and choline in leaves of the betaine-producing mangrove species *Avicennia marina*

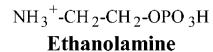
Mihoko Suzuki^a, Eri Yasumoto^a, Shigeyuki Baba^b, Hiroshi Ashihara^{a,c}

^aMetabolic Biology Group, Department of Molecular Biology and Biochemistry, Graduate Division of Life Sciences, Graduate School of Humanities and Sciences, Ochanomizu University, Bunkyo-ku, Tokyo, 112-8610, Japan

^bDepartment of Environmental Science and Technology, College of Agriculture, University of the Ryukyus, Nishihara, Okinawa, 903-01, Japan

^cDepartment of Biology, Faculty of Science, Ochanomizu University, Bunkyo-ku, Tokyo, 112-8610, Japan

The effect of salt on the metabolism of ¹⁴C-labelled ethanolamine and choline in leaf disks of a glycinebetaine-forming mangrove plant, *Avicennia marina*, was studied.



Phytochemistry, 2003, **64**, 941

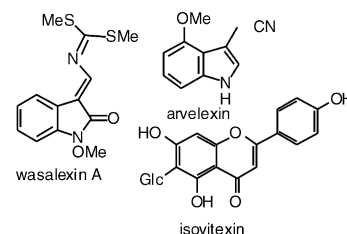
Phytochemistry, 2003, **64**, 949

Phytoalexins from *Thlaspi arvense*, a wild crucifer resistant to virulent *Leptosphaeria maculans*: structures, syntheses and antifungal activity

M.S.C. Pedras, P.B. Chumala, M. Suchy

Department of Chemistry, University of Saskatchewan, 110 Science Place, Saskatoon, SK, Canada S7N 5C9

We have investigated phytoalexin production in leaves of *Thlaspi arvense* under abiotic and biotic elicitation and report here two phytoalexins, wasalexin A and arvelexin, their syntheses and antifungal activity, as well as the isolation of isovitexin, a constitutive glycosyl flavonoid.

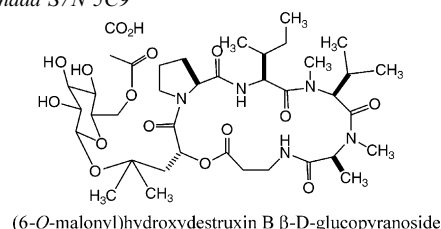
Phytochemistry, 2003, **64**, 957

Transformation of the host-selective toxin destruxin B by wild crucifers: probing a detoxification pathway

M.S.C. Pedras, S. Montaut, I.L. Zaharia, Y. Gai, D.E. Ward

Department of Chemistry, University of Saskatchewan, 110 Science Place, Saskatoon, SK, Canada S7N 5C9

Destruxin B is detoxified to the malonylated glucoside in *Camelina sativa*, *Capsella bursa-pastoris*, and *Eruca sativa*, suggesting a conservation of this detoxification pathway in both wild and cultivated crucifers.

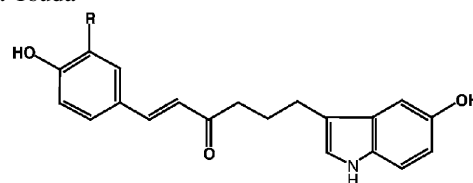
Phytochemistry, 2003, **64**, 965

Phenylpropanoid amides of serotonin accumulate in witches' broom diseased bamboo

Eiji Tanaka^a, Chihiro Tanaka^a, Naoki Mori^b, Yasumasa Kuwahara^b, Mitsuya Tsuda^a^aDivision of Environmental Science and Technology, Graduate School of Agriculture, Kyoto University, Kitashirakawa Oiwake-Cho, Sakyo-Ku, Kyoto, 606-8502, Japan^bDivision of Applied Life Sciences, Graduate School of Agriculture, Kyoto University, Kitashirakawa Oiwake-Cho, Sakyo-Ku, Kyoto, 606-8502, Japan

From witches' broom diseased bamboo, *Phyllostachys bambusoides*, *N-p-coumaroylserotonin* and *N-feruloylserotonin* were isolated.

N-p-coumaroylserotonin possesses antifungal activity against *Aciculosporium take*, the causal agent of witches' broom of bamboo.

Phytochemistry, 2003, **64**, 971

Occurrence of the allene oxide cyclase in different organs and tissues of *Arabidopsis thaliana*

Bettina Hause^a, Irene Stenzel^b, Otto Miersch^b, Claus Wasternack^b^aInstitute of Plant Biochemistry, Department of Secondary Metabolism, Weinberg 3, D-06120 Halle/S., Germany^bInstitute of Plant Biochemistry, Department of Natural Product Biotechnology, Weinberg 3, D-06120 Halle/S., Germany

The allene oxide cyclase (AOC) is an important enzyme in jasmonate biosynthesis. Levels and occurrence of AOC in different organs and tissues are altered during development of *Arabidopsis thaliana*.



Prenylated xanthenes with NGF-potentiating activity from *Garcinia xanthochymus*

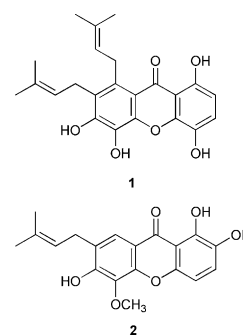
Wisinee Chanmahasathien^a, Yushan Li^a, Masayuki Satake^b, Yasukatsu Oshima^b, Nijisiri Ruangrungrasi^c, Yasushi Ohizumi^a

^aDepartment of Pharmaceutical Molecular Biology, Graduate School of Pharmaceutical Sciences, Tohoku University, Aoba, Aramaki, Aoba-ku, Sendai 980-8578, Japan

^bLaboratory of Bioorganic Chemistry, Graduate School of Life Sciences, Tohoku University, Tsutsumidori-Amamiyamachi 1-1, Aoba-ku, Sendai 981-8555, Japan

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

Two prenylated xanthenes and a known xanthone from *Garcinia xanthochymus*, whose structures were elucidated by spectroscopic analysis, enhanced nerve growth factor (NGF)-mediated neurite outgrowth in PC12D cells.



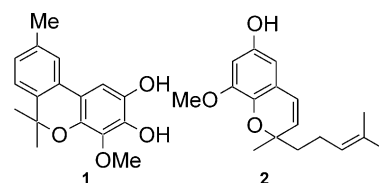
Phytochemistry, 2003, **64**, 981

Phenolic derivatives from *Wigandia urens* with weak activity against the chemokine receptor CCR5

Shugeng Cao, Christine Rossant, Siewbee Ng, Antony D. Buss, Mark S. Butler

MerLion Pharmaceuticals, 59A Science Park Drive, The Fleming, Singapore Science Park, Singapore 118240

Three compounds were purified from the stems of *Wigandia urens* using a CCR5 scintillation proximity assay to guide isolation and were found to have IC₅₀ values of 33, 46 and 26 μ M.



Phytochemistry, 2003, **64**, 987

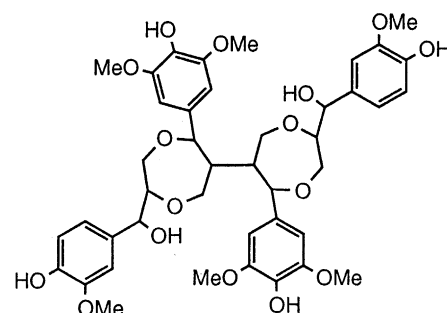
Two lignan dimers from bamboo stems (*Phyllostachys edulis*)

Ai Suga^a, Yoshihisa Takaishi^a, Satoru Goto^a, Tatsuo Munakata^b, Izumi Yamauchi^a, Kentaro Kogure^a

^aFaculty of Pharmaceutical Sciences, University of Tokushima, Shomachi 1-78, Tokushima, 770-8505, Japan

^bDepartment of Industrial Chemistry, Faculty of Engineering, Tohwa University, Chikushigaoka 1-1-1, Minami-ku, Fukuoka, 815-8510, Japan

Two lignan dimers, phyllostadimer A and B together with 14 known compounds were isolated from bamboo stems.



Phytochemistry, 2003, **64**, 991

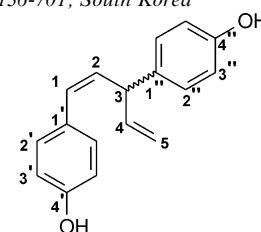
Isolation and anti-oomycete activity of nyasol from *Anemarrhena asphodeloides* rhizomes

Hee Jin Park^a, Jung Yeop Lee^a, Surk Sik Moon^b, Byung Kook Hwang^a

^aLaboratory of Molecular Plant Pathology, College of Life and Environmental Sciences, Korea University, Seoul 136-701, South Korea

^bDepartment of Chemistry, Kongju National University, Kongju 314-701, South Korea

Nyasol isolated from *Anemarrhena asphodeloides* rhizomes effectively inhibited the mycelial growth of *Phytophthora capsici*. treatment with nyasol was significantly effective in suppressing the Phytophthora blight on pepper plants.



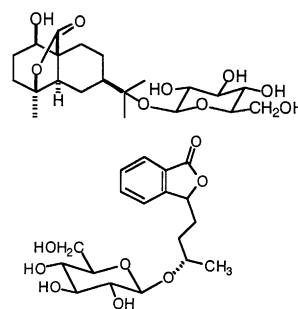
Phytochemistry, 2003, **64**, 997

Polar constituents of celery seed

Junichi Kitajima, Toru Ishikawa, Mitsuru Satoh

Showa Pharmaceutical University, Higashi-Tamagawagakuen 3, Machida, Tokyo 194-8543, Japan

Five sesquiterpenoid glucosides (celerioside A–E) and three phthalide glycosides (celephthalide A–C) were isolated from the methanol extract of celery seed.



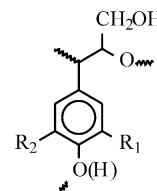
Phytochemistry, 2003, **64**, 1003

Profiling phenolic metabolites in transgenic alfalfa modified in lignin biosynthesis

Fang Chen, Anthony L. Duran, Jack W. Blount, Lloyd W. Sumner, Richard A. Dixon

Plant Biology Division, Samuel Roberts Noble Foundation, 2510 Sam Noble Parkway, Ardmore, OK 73401, USA

Phenylpropanoid metabolism in caffeic acid 3-*O*-methyltransferase (COMT) and caffeoyl CoA 3-*O*-methyltransferase (CCoAOMT) down-regulated transgenic alfalfa plants were investigated by metabolic profiling approach with statistic analysis.



Phytochemistry, 2003, **64**, 1013

Changes in lignin content of leaf litters during mulching

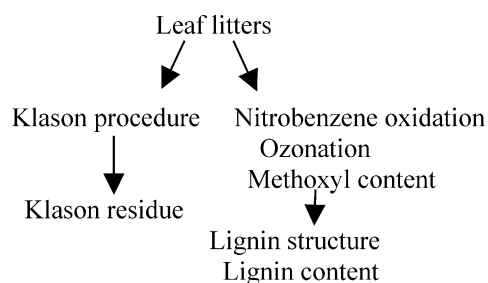
Zhenfu Jin^a, Takuya Akiyama^a, Byung Yeoup Chung^a, Yuji Matsumoto^a, Kenji Iiyama^b, Satomi Watanabe^c

^a*Graduate School of Agricultural and Life Sciences, The University of Tokyo, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo 113-8657, Japan*

^b*Asian Natural Environmental Science Center, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo 113-8657, Japan*

^c*Graduate School of Frontier Sciences, The University of Tokyo, 1-1-1 Yayoi, Bunkyo-ku, Tokyo 113-8657, Japan*

Lignin property and lignin content of decomposing leaf litters are reported.



Phytochemistry, 2003, **64**, 1023