Phytochemistry, 2004, **65**, 147

Eicosapentaenoic acid: biosynthetic routes and the potential for synthesis in transgenic plants

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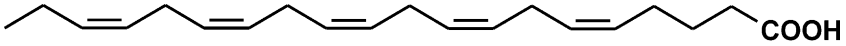
Eicosapentaenoic acid (20:5$\Delta^{5,8,11,14,18}$; EPA) is important in human health and nutrition, as a precursor for anti-inflammatory eicosanoids and membrane component. EPA is thought to have a protective role against cardiovascular disease and Metabolic Syndrome. EPA is currently obtained from fish oils, a diminishing resource. The biosynthesis of EPA is described, as is the potential for production in transgenic plants.



Phytochemistry, 2004, **65**, 159

cis-3-Hexenal production in tobacco is stimulated by 16-carbon monounsaturated fatty acids

Mei Hong[a], Barbara A. Zilinskas[a], Douglas C. Knipple[b], Chee-kok Chin[a]

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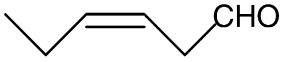
[b]*Department of Entomology, New York State Agricultural Experiment Station, Cornell University, Geneva, New York 14456, USA*

Tobacco plants expressing the yeast Δ9 desaturase gene and an insect Δ11 desaturase gene, respectively, produced elevated levels of *cis*-3-hexenal.



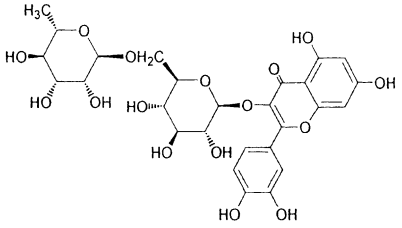
Phytochemistry, 2004, **65**, 169

Agrobacterium tumefaciens AK-*6b* gene modulates phenolic compound metabolism in tobacco

Ivan Gális[a,b], Yasutaka Kakiuchi[a], Petr Šimek[c], Hiroetsu Wabiko[a]

[a]*Faculty of Bioresource Sciences, Akita Prefectural University, Nishi 241-7, Nakano-Aza Kaidobata, Shimoshinjo, Akita 010-0195, Japan*
[b]*Plant Science Center, RIKEN, 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama 230-0045, Japan*
[c]*Laboratory of Analytical Chemistry, Institute of Entomology, Academy of Sciences of Czech Republic, Branišovská 31, 37005 Ceské Budejovice, Czech Republic*

Plant tumourigenic AK-*6b* gene directs the synthesis of flavenoids including rutin in tobacco



Rutin

Phytochemistry, 2004, **65**, 181

β-Adenosine, a bioactive compound in grass chaff stimulating mushroom production

Denisa L. Domondon[a], Weidong He[b], Norbert De Kimpe[b], Monica Höfte[a], Joseph Poppe[a]

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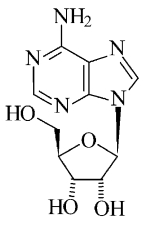
[b]*Department of Organic Chemistry, Faculty of Agricultural and Applied Biological Sciences, Ghent University, Coupure Links 653, 9000 Ghent, Belgium*

Supplementation of wheat straw with 30% *Lolium perenne* grass chaff enhances the fructification and yield of the edible mushrooms *Pleurotus pulmonarius* and *Stropharia rugosoannulata*. We have identified β-adenosine as one of the bioactive compounds in grass chaff that stimulates fruit body formation and increases yield.



Phytochemistry, 2004, **65**, 189

Studies on structure–activity relationship of sphaeropsidins A–F, phytotoxins produced by *Sphaeropsis sapinea* f. sp. *cupressi*

Lorenzo Sparapano[a], Giovanni Bruno[a], Olga Fierro[b], Antonio Evidente[b]

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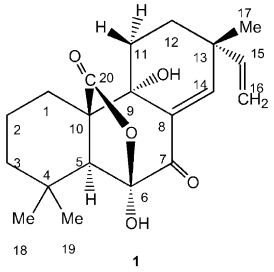
[b]*Dipartimento di Scienze del Suolo, della Pianta e dell'Ambiente, Università di Napoli Federico II, I-80055 Portici, Italy*



1

We report the structure–activity relationship of sphaeropsidins A (**1**)–F, primarane diterpenes produced by *Sphaeropsis sapinea* f. sp. *cupressi*, the casual agent of a canker form on cypress tree.

Phytochemistry, 2004, **65**, 199

Sesquiterpenes of the liverwort *Scapania undulata*

Adewale Martins Adio[a], Claudia Paul[b], Petra Kloth[a], Wilfried A. König[a]

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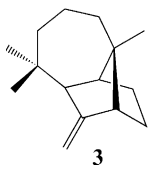
[b]*Thetis-IBN GmbH, Notkestrasse 85, D-22607 Hamburg, Germany*

The volatile sesquiterpene constituents of the liverwort *Scapania undulata* (longiborneol chemotype) were investigated by spectroscopic methods. (+)-Helminthogermacrene, (−)-*cis*-β-elemene, (+)-β-isolongibornene (**3**) and (−)-perfora-1,7-diene (**4**) were identified as new natural products.



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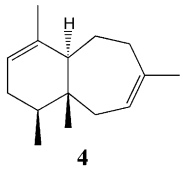


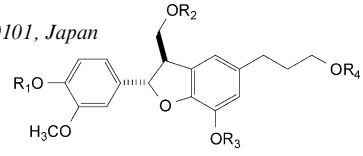
4

Phytochemistry, 2004, **65**, 207

Neolignan and flavonoid glycosides in *Juniperus communis* var. *depressa*

Tsutomu Nakanishi[a], Naoki Iida[a], Yuka Inatomi[a], Hiroko Murata[a], Akira Inada[a], Jin Murata[b], Frank A. Lang[c], Munekazu Iinuma[d], Toshiyuki Tanaka[e]

[a]*Faculty of Pharmaceutical Sciences, Setsunan University, 45-1 Nagaotoge-cho, Hirakata, Osaka 573-0101, Japan*
[b]*Botanical Gardens, Koishikawa, Graduate School of Science, University of Tokyo, 3-7-1 Hakusan, Bunkyo-Ku, Tokyo, 112-0001, Japan*
[c]*Department of Biology, Southern Oregon University, 1250 Siskiyou, Ashland, OR 97520-5071, USA*
[d]*Gifu Pharmaceutical University, 5-6-1 Mitahora-higashi, Gifu 502-8585, Japan*
[e]*Gifu Prefectural Institute of Health and Environmental Sciences, 1-1 Nakafudogaoka, Kakamihara 504-0838, Japan*



1: R_1= xyl, R_2= R_3= R_4= H
2: R_1= H, R_2= rha, R_3= CH_3, R_4= glc
4: R_2= rha, R_1= R_3= R_4= H

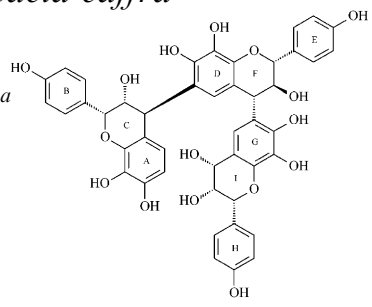
Two neolignan glycosides were isolated from *Juniperus communis* var. *depressa* along with known neolignan and flavonoid glycosides.

Phytochemistry, 2004, **65**, 215

Trimeric proteracacinidins and a (6→6)-bis-leucoteracacinidin from *Acacia galpinii* and *Acacia caffra*

Linette Bennie[a], Johan Coetzee[a], Elfranco Malan[a], Desmond Slade[b], Jannie P.J. Marais[b], Daneel Ferreira[b]

[a]*Department of Chemistry, University of the Free State, PO Box 339, Bloemfontein, 9300 South Africa*
[b]*National Center for Natural Products Research, Research Institute of Pharmaceutical Sciences, School of Pharmacy, The University of Mississippi, University, MS 38677, USA*



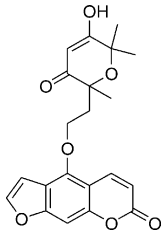
The rare series of trimeric proteracacinidins is extended by identification of the first analogues with exclusive C–C interflavanyl bonds, i.e. the epioritin-(4β→6)-oritin-(4α→6)-epioritin-4α-ol. These compounds are accompanied by the first bis-flavan-3,4-diol.

Phytochemistry, 2004, **65**, 221

Prenylated flavonoids, monoterpenoid furanocoumarins and other constituents from the twigs of *Dorstenia elliptica* (Moraceae)

Berhanu M. Abegaz[a], Bonaventure T. Ngadjui[b], Gabriel N. Folefoc[b], Serge Fotso[b], Pantaleon Ambassa[b], Merhatibeb Bezabih[a], Etienne Dongo[b], Frode Rise[c], Dirk Petersen[c]

[a]*Department of Chemistry, University of Botswana, Private Bag UB00704, Gaborone, Botswana*
[b]*Department of Organic Chemistry, University of Yaounde 1, BP 812, Yaounde, Cameroon*
[c]*Department of Chemistry, University of Oslo, PO Box 1033 Blindern, NO-0315 Oslo, Norway*



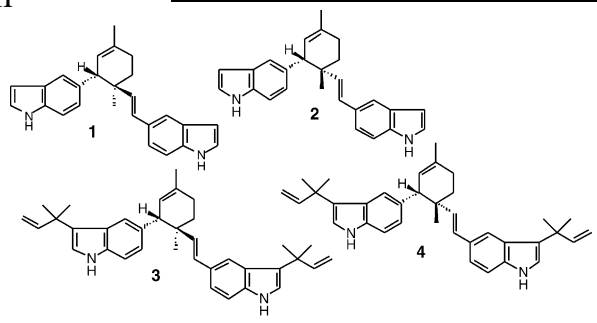
A new prenylated flavonoid and two monoterpenoid substituted coumarins were identified from the twigs of *Dorstenia elliptica* (Moraceae)

Phytochemistry, 2004, **65**, 227

The caulindoles: dimeric prenylindoles from *Isolona cauliflora*

John J. Makangara, Leonia Henry, Stephan A. Jonker, Mayunga H.H. Nkunya

Department of Chemistry, University of Dar es Salaam, PO Box 35061, Dar es Salaam, Tanzania



Two diastereomeric pairs of dimeric prenylindoles, the caulindoles A–D (**1–4**), 5-(3-methyl-2-butenyl)-1*H*-indole, and (*E*)-5-(3-methylbuta-1,3-dienyl)-1*H*-indole were isolated from the ecologically endangered Annonaceae species, *Isolona cauliflora* and their structures determined from spectroscopic data. Biogenetically, the caulindoles may be Diels–Alder-type cycloaddition products of mono-prenylindoles as the dienes and dienophiles.

Phytochemistry, 2004, **65**, 233

Rapid dereplication of estrogenic compounds in pomegranate (*Punica granatum*) using on-line biochemical detection coupled to mass spectrometry

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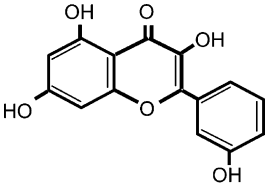
[a]*Kiadis, Niels Bohrweg 11–13, 2333 AC, Leiden, The Netherlands*
[b]*Rimonest Ltd., Science Park Technion, Nesher, Israel*
[c]*Department of Analytical Chemistry and Applied Spectroscopy, Vrije Universiteit, Amsterdam, De Boelelaan 1083, 1081 HV, Amsterdam, The Netherlands*
[d]*Leiden/Amsterdam Center for Drug Research, Division of Analytical Chemistry, University of Leiden, PO Box 9502, 2300 RA, Leiden, The Netherlands*



Bioactive compounds, such as kaempferol (*see displayed structure*) are rapidly detected and identified in compex mixtures such as natural product extracts.