

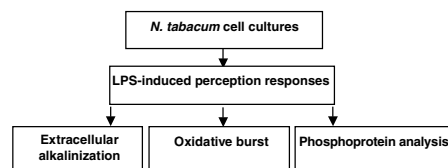
GRAPHICAL ABSTRACTS

Protein phosphorylation in *Nicotiana tabacum* cells in response to perception of lipopolysaccharides from *Burkholderia cepacia*

Isak B. Gerber, Ian A. Dubery

The perception mechanism of cultured *Nicotiana tabacum* cells towards lipopolysaccharides (LPS) from *Burkholderia cepacia* was investigated with regard to the role of protein phosphorylation during signal perception-related responses. The results obtained in this study provide evidence that *B. cepacia* LPS has specific effects on reversible protein phosphorylation events underlying the perception systems involved in the interaction of plant cells with LPS and as such, contribute to the understanding of LPS as a resistance elicitor or possible triggering agent of innate immunity.

Phytochemistry, 2004, **65**, 2957



Steroid profiles of transgenic tobacco expressing an *Actinomyces* 3-hydroxysteroid oxidase gene

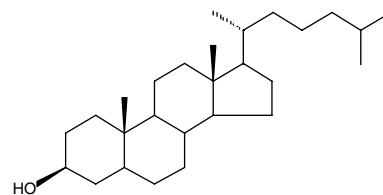
Jennelle Heyer^a, Brandon Parker^a, David Becker^b, John Ruffino^a, Amber Fordyce^a, Matt De Witt^a, Mark Bedard^a, Robert Grebenok^a

^a Department of Biology, Canisius College, Buffalo, New York 14208, USA

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The action of a 3-hydroxysteroid oxidase enzyme within mature vegetative transgenic tobacco alters the resident sterol pool facilitating the enhanced accumulation of sterol, 3-ketosteroid and stanol throughout the plant. The modulated sterol pool correlates directly with altered thylakoid membrane-associated biochemical processes, in which the *in vitro* rate of whole chain photosynthetic electron transport is enhanced at reduced environmental temperatures.

Phytochemistry, 2004, **65**, 2967



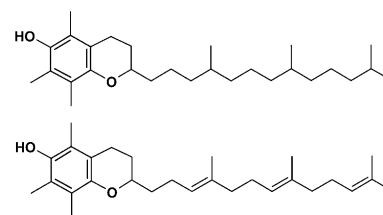
Tocopherol and tocotrienol accumulation during development of caryopses from barley (*Hordeum vulgare* L.)

Jon Falk, Alice Krahnsöver, Thomas A.W. van der Kooij, Mark Schlensoog, Karin Krupinska

Institute of Botany, University of Kiel, Olshausenstr. 40, 24098 Kiel, Germany

The temporal and spatial accumulation of tocopherols and tocotrienols during development of caryopsis from barley (*Hordeum vulgare* L.) is reported.

Phytochemistry, 2004, **65**, 2977

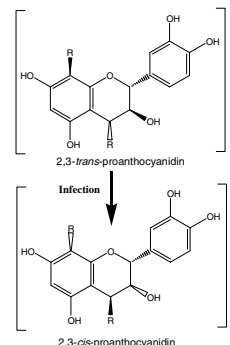


Exobasidium vexans infection of *Camellia sinensis* increased 2,3-*cis* isomerisation and gallate esterification of proanthocyanidins

P.A. Nimal Punyasiri, Gregory J. Tanner, I. Sarath B. Abeysinghe, Vijaya Kumar, Peter M. Campbell, N.H.L. Pradeepa

Exobasidium vexans infection of *Camellia sinensis*, resulted in a shift of proanthocyanidin stereochemistry away from 2,3-*trans* isomers and towards 2,3-*cis* isomers and increased gallic acid esterification of the initiating subunits of proanthocyanidins.

Phytochemistry, 2004, **65**, 2987

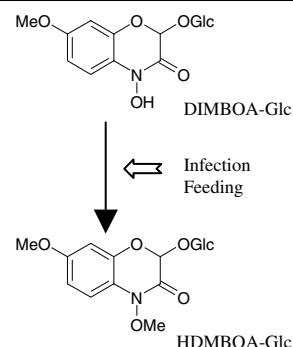


Accumulation of HDMBOA-Glc is induced by biotic stresses prior to the release of MBOA in maize leaves

Akira Oikawa, Atsushi Ishihara, Chihiro Tanaka, Naoki Mori, Mitsuya Tsuda, Hajime Iwamura

Fungal infection, treatment with culture filtrates of the fungi, and feeding by armyworm induced HDMBOA-Glc accumulation in maize leaves, indicating that conversion of DIMBOA-Glc functions as a part of defense reaction against biological stress.

Phytochemistry, 2004, **65**, 2995



The distribution of serine proteinase inhibitors in seeds of the Asteridae

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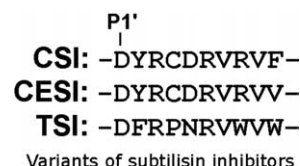
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^c V.L. Komarov Botanical Institute, Prof. Popova 2, St. Petersburg 197376, Russia

Analysis of seeds from 398 species representing 8 orders, 32 families and 181 genera of Asteridae showed two major types of serine proteinase inhibitors. Members of the potato inhibitor I family were widely distributed and inhibitory to subtilisin and one or more other proteinases. The second major group included trypsin inhibitors related to the well-characterised Bowman–Birk inhibitors of legume seeds but these varied widely in their sequences and structure.

Phytochemistry, 2004, **65**, 3003

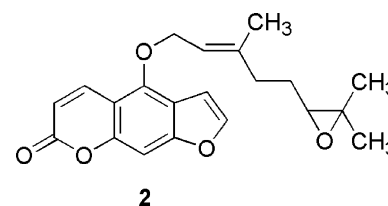


Identification and biological evaluation of grapefruit oil components as potential novel efflux pump modulators in methicillin-resistant *Staphylococcus aureus* bacterial strains

Abdel-Nasser Abulrob, Marc T.E. Suller, Mark Gumbleton, Claire Simons, A. Denver Russell

Grapefruit oil components were isolated and characterised and evaluated for intrinsic antibacterial activity and modulating effect in MRSA and MSSA strains. The grapefruit component 4-[[*(E)*-5-(3,3-dimethyl-2-oxiranyl)-3-methyl-2-pentenyl]oxy]-7*H*-furo[3,2-*g*]-chromen-7-one (**2**) enhanced the susceptibility of MRSA bacteria strains and other micro-organisms to agents, e.g. ethidium bromide and norfloxacin, to which these micro-organisms are normally resistant.

Phytochemistry, 2004, **65**, 3021



Anti-plasmodial flavonoids from the stem bark of *Erythrina abyssinica*

Abiy Yenesew ^a, Martha Induli ^a, Solomon Derese ^a, Jacob O. Midiwo ^a, Matthias Heydenreich ^b, Martin G. Peter ^b, Hoseah Akala ^c, Julia Wangui ^c, Pamela Liyala ^c, Norman C. Waters ^c

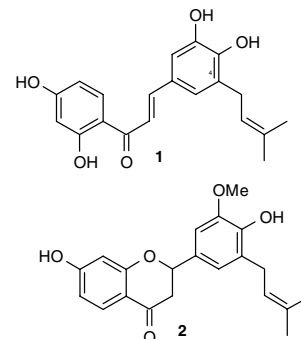
^a Department of Chemistry, University of Nairobi, P.O. Box 30197, Chiromo Road, Nairobi, Kenya

^b Institut für Chemie, Universität Potsdam, P.O. Box 60 15 53, D-14415 Potsdam, Germany

^c United States Army Medical Research Unit-Kenya, MRU 64109, APO, AE 09831-4109, USA

A chalcone, **1** and a flavanone, **2**, along with known flavonoids, have been isolated as the anti-plasmodial principles of the stem bark of *Erythrina abyssinica*. The structures were determined on the basis of spectroscopic evidence.

Phytochemistry, 2004, **65**, 3029



Antioxidant activity of phenylpropanoid esters isolated and identified from *Platycodon grandiflorum* A. DC

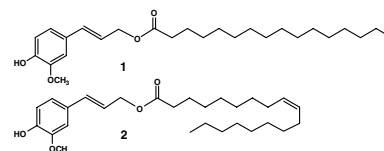
Ji-Young Lee ^a, Jae-Wook Yoon ^a, Cheong-Tae Kim ^b, Seung-Taik Lim ^a

^a Graduate School of Biotechnology, Korea University, 5-1 Anam-dong, Sungbuk-ku, Seoul 136-701, Korea

^b Department of Food Science and Technology, Seoul National University, Korea

Antioxidant compounds were isolated from the petroleum ether extracts of *Platycodon grandiflorum* root, i.e. (coniferyl alcohol esters with palmitic acid **1** and oleic acid **2**).

Phytochemistry, 2004, **65**, 3033



Flavonoid glycosides and isoquinolinone alkaloids from *Corydalis bungeana*

Chen Xie ^{a,b,c}, Nigel C. Veitch ^a, Peter J. Houghton ^b, Monique S.J. Simmonds ^a

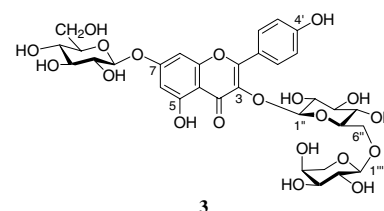
^a Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, UK

^b Department of Pharmacy, King's College London, Franklin-Wilkins Building, 150 Stamford Street, London SE1 9NN, UK

^c Institute of Medicinal Plant Development, Chinese Academy of Medical Sciences, Xi Bei Wang, Haidian District, Beijing 100094, China

The whole plant of *Corydalis bungeana* (Papaveraceae) yielded several flavonol *O*-glycosides together with two isoquinolinone alkaloids.

Phytochemistry, 2004, **65**, 3041

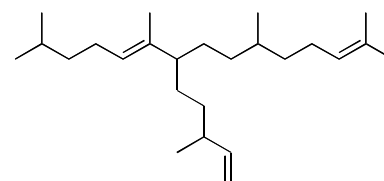


C₂₅ highly branched isoprenoid alkenes from the marine benthic diatom *Pleurosigma strigosum*

Vincent Grossi, Béatriz Beker, Jan A.J. Geenevasen, Stefan Schouten, Danielle Raphel, Marie-France Fontaine, Jaap S. Sinninghe Damsté

C₂₅ highly branched isoprenoid alkenes were detected in *Pleurosigma strigosum* isolated from Mediterranean coastal sediments. The major HBI alkene was a triene whose structure is reported for the first time. *P. strigosum* was also found to contain a diene commonly detected in the marine environment but whose presence in diatoms had up to now not been shown.

Phytochemistry, 2004, **65**, 3049



Bioactive apocarotenoids annuionones F and G: structural revision of annuionones A, B and E

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Grupo de Alelopatía, Departamento de Química Orgánica, Facultad de Ciencias, Universidad de Cádiz, Cl República Saharaui s/n, Apdo. 40, 11510-Puerto Real (Cádiz), Spain

The polar bioactive fractions of *Helianthus annuus* cv. Stella and SH-222 have yielded eight apocarotenoids, two of them isolated for the first time as natural products (annuionones F and G). The isolation of higher amounts of annuionones A and E allowed us to realize a more comprehensive spectroscopical study. We propose a revised structure for annuionone A, B and E based on careful re-analyses of spectroscopical data.

Phytochemistry, 2004, **65**, 3057

