Phytochemistry, 2003, **63**, 635

Biochemical evidence for a cGMP-regulated protein kinase in *Pharbitis nil*

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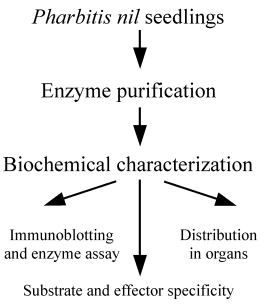
A 70 kDa cGMP-regulated protein kinase was identified in the extracts from *Pharbitis nil* seedlings and the biochemical characterization and distribution of this enzyme are reported.



Phytochemistry, 2003, **63**, 643

Bitter gourd proteinase inhibitors: potential growth inhibitors of *Helicoverpa armigera* and *Spodoptera litura*

Manasi Telang[a], Ajay Srinivasan[a], Aparna Patankar[a], Abhay Harsulkar[a], Vijay Joshi[a], Archana Damle[a], Vasanti Deshpande[a], Mohini Sainani[a], Prabhakar Ranjekar[a], Gorakh Gupta[b], Ajanta Birah[b], Seema Rani[b], Manavendra Kachole[c], Ashok Giri[a], Vidya Gupta[a]

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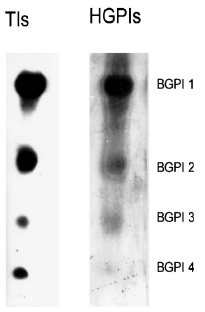
[b]*Department of Entomology, Indian Agricultural Research Institute, Pusa Campus, New Delhi, 110012, India*
[c]*Department of Biochemistry, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, 431004, India*

Proteinase inhibitors from seeds of bitter gourd were identified as strong inhibitors of *H. armigera* gut proteinases. In feeding studies these PIs were found to retard growth and development of *H. armigera* and *S. litura* larvae.



Phytochemistry, 2003, **63**, 653

3,4-Dichloroaniline is detoxified and exported via different pathways in *Arabidopsis* and soybean

Si-Houy Lao[a], Caroline Loutre[b], Melissa Brazier[b], Julian O.D. Coleman[c], David J. Cole[d], Robert Edwards[b], Frederica L. Theodoulou[a]

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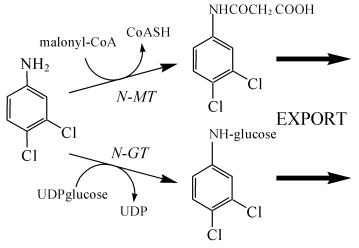
[b]*School of Biological and Biomedical Sciences, University of Durham, Durham DH1 3LE, UK*
[c]*School of Biological and Molecular Sciences, Oxford Brookes University, Gypsy Lane, Oxford OX3 0BP, UK*
[d]*Formerly of Aventis Crop Science, Fyfield Road, Ongar, Essex CM5 0HW, UK*

In soybean roots, 3,4-dichloroaniline was metabolised predominantly to the *N*-malonyl conjugate whereas in *Arabidopsis thaliana* root cultures, the *N*-glucoside was the major metabolite. In both cases, the respective DCA-conjugates were exported from the roots into the culture medium.



Phytochemistry, 2003, **63**, 663

The microbiological transformation of the diterpenes dehydroabietanol and teideadiol by *Mucor plumbeus*

Braulio M. Fraga[a], Melchor G. Hernández[a], Jose M. Artega[b], Sergio Suárez

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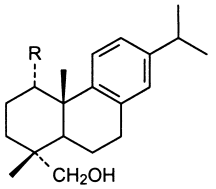
[b]*Instituto Universitario de Bio-Orgánica "Antonio González", Universidad de La Laguna, Tenerife, Spain*

Biotransformation of the diterpenes dehydroabietanol (**1**) and teideadiol (**15**) by *Mucor plumbeus* produces compounds hydroxylated at the 2α- and 7-positions. 15-Hydroxylated metabolites were only obtained in the incubation of dehydroabietanol.



1 R = H
15 R = OH

Phytochemistry, 2003, **63**, 669

Hydroperoxy-arachidonic acid mediated *n*-hexanal and (*Z*)-3- and (*E*)-2-nonenal formation in *Laminaria angustata*

Kangsadan Boonprab[a], Kenji Matsui[a], Yoshihiko Akakabe[a], Norishige Yotsukura[b], Tadahiko Kajiwara[a]

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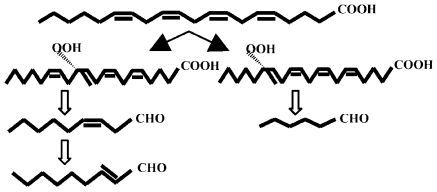
[b]*Institute of Algological Research, Faculty of Science, Hokkaido University, Hokkaido 051-0003, Japan*

n-Hexanal and (*Z*)-3- and (*E*)-2-nonenal in a brown alga, *Laminaria angustata*, were generated from arachidonic acid *via* intermediates, (*S*)-12-hydroperoxy-5(*Z*),8(*Z*),10(*E*),14(*Z*)-eicosatetraenoic acid and (*S*)-15-hydroperoxy-5(*Z*),8(*Z*),11(*Z*),13(*E*)-eicosatetaenoic acid, respectively, through a lipoxygenase/hydroperoxide lyase system.



Phytochemistry, 2003, **63**, 679

Soluble and wall-bound phenolics and phenolic polymers in *Musa acuminata* roots exposed to elicitors from *Fusarium oxysporum* f.sp. *cubense*

Ana R.F.D.C. de Ascensao, Ian A. Dubery

Department of Biochemistry, RAU-University, PO Box 524, Auckland Park, 2006, South Africa

The identification of soluble and wall-bound phenolics and phenolic polymers in *Musa acuminata* (Goldfinger) roots exposed to elicitors from *Fusarium oxysporum* f.sp. *cubense* race 4 is reported.

Total Root Phenols
- ↳ **Free phenolic acids**
- ↳ **Phenolic glycosides**
- ↳ **Phenolic esters**
- ↳ **Cell wall-bound esters**
  - ↳ ↳ **Lignin**

Phytochemistry, 2003, **63**, 687

Melanin in the extracellular matrix of germlings of *Botrytis cinerea*

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[a]*USDA-ARS, Horticultural Crops Research Unit, 3420 NW Orchard Avenue, Corvallis, OR 97330, USA*
[b]*Department of Horticulture, Oregon State University, Corvallis, OR 97331, USA*
[c]*Experimentalphysik V, EKM, Institut fuer Physik, Universitaet Augsburg, D-86159 Augsburg, Germany*
[d]*Department of Botany and Plant Pathology, Oregon State University, Corvallis, OR 97331, USA*

A dark pigment in the extracellular matrix of germlings of *Botrytis cinerea* exhibited the electron paramagnetic resonance characteristics of a fungal melanin. Scanning and transmission electron microscopy indicated that this pigment had a filamentous nature.

Botrytis cinerea
Extracellular Matrix

Reflux in HCl

Dark pigment
(Analyses using electron paramagnetic resonance and electron microscopy demonstrate pigment to be a fungal melanin that is filamentous in form.)

Phytochemistry, 2003, **63**, 693

Long-chain (C_{19}–C_{29}) 1-chloro-*n*-alkanes in leaf waxes of halophytes of the Chenopodiaceae

Vincent Grossi, Danielle Raphel

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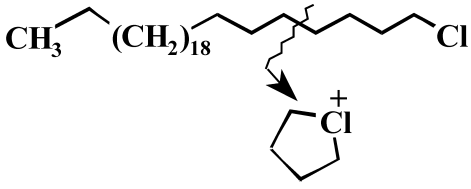
A minor series of odd and even carbon-chains 1-chloro-*n*-alkanes ranging from C_{19} to C_{29} were identified in the hydrocarbon fraction of leaf waxes of three halophylic members of the Chenopodiaceae. No evidence for a precursor–product relationship between the 1-chloro-*n*-alkanes and other wax classes could be established.



***m/z* 91**

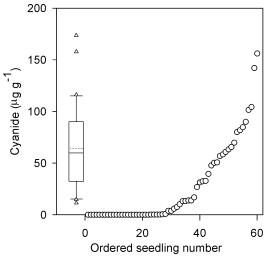
Phytochemistry, 2003, **63**, 699

Cyanogenic *Eucalyptus nobilis* is polymorphic for both prunasin and specific β-glucosidases

Roslyn M. Gleadow, Anita C. Vecchies, Ian E. Woodrow

School of Botany, The University of Melbourne, Victoria, 3010, Australia

Eucalyptus nobilis is unique among eucalypts in being highly polymorphic for cyanogenesis. Acyanogenic trees lack either prunasin, or the specific β-glucosidase, or both.



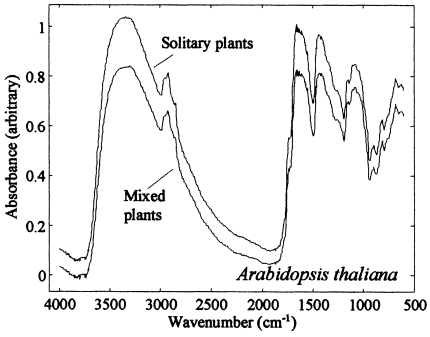
Phytochemistry, 2003, **63**, 705

Investigating plant–plant interference by metabolic fingerprinting

Edward Gidman[a], Royston Goodacre[b], Bridget Emmett[c], Aileen R. Smith[a], Dylan Gwynn-Jones[a]

[a]*Institute of Biological Sciences, University of Wales, Aberystwyth, Ceredigion SY23 3DA, UK*
[b]*Department of Chemistry, UMIST, PO Box 88, Sackville Street, Manchester M60 1QD, UK*
[c]*Centre for Ecology and Hydrology, Bangor, Deiniol Road, Bangor LL57 2UW, UK*

Fourier transform–infrared spectroscopy and cluster analysis were used to detect changes in the global metabolic fingerprints of plants in response to biotic interactions.



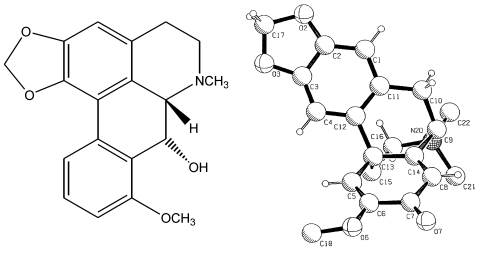
Phytochemistry, 2003, **63**, 711

Characterisation of alkaloids from some Australian *Stephania* (Menispermaceae) species

Joanne T. Blanchfield[a], Donald P.A. Sands[b], Colin H.L. Kennard[a], Karl A. Byriel[a], William Kitching[a]

[a]*Department of Chemistry, School of Molecular and Microbial Sciences, The University of Queensland, Brisbane, Qld. 4072, Australia*
[b]*CSIRO, Division of Entomology, Private Bag 3, Indooroopilly, Qld. 4068, Australia*

Complete and unambiguous NMR analysis of several benzylisoquinoline alkaloids including (−)-ayuthianine (**4**) and the X-ray crystal structure of the methiodide derivative of (−)-amurine (**9**).



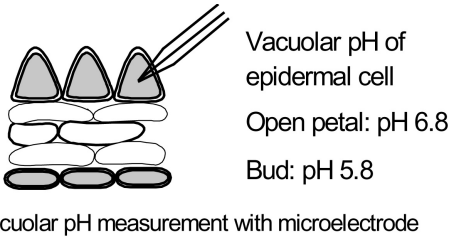
Phytochemistry, 2003, **63**, 721

Mechanism of dusky reddish-brown "kaki" color development of Japanese morning glory, *Ipomoea nil* cv. Danjuro

Kumi Yoshida[a], Minako Osanai[b], Tadao Kondo[c]

[a]*Graduate School of Information Sciences, Nagoya University, Chikusa, Nagoya 464-8601, Japan*
[b]*Chemical Instrument Center, Nagoya University, Chikusa, Nagoya 464-8601, Japan*
[c]*Graduate School of Bioagricultural Sciences, Nagoya University, Chikusa, Nagoya 464-8601, Japan*

The mechanism of dusky reddish-brown "kaki" color development of morning glory, *Ipomoea nil* cv. Danjuro, was clarified by combination of vacuolar pH and color measurements of single cell and reproduction by mixing isolated components.



Phytochemistry, 2003, **63**, 727

Two very unusual macrocyclic flavonoids from the water lily *Nymphaea lotus*

Awatif A. Elegami, Catharine Bates, Alexander I. Gray, Simon P. Mackay, Graham G. Skellern, Roger D. Waigh

Department of Pharmaceutical Sciences, Strathclyde Institute for Biomedical Sciences, University of Strathclyde, 27 Taylor Street, Glasgow G4 0NR, UK

Three novel flavonols, myricetin-3′-*O*-(6″-*p*-coumaroyl)glucoside and two epimeric macrocyclic derivatives have been isolated from the wild water lily *Nymphaea lotus* L. This is the first report of such a macrocycle from any source.