

Phytochemistry Vol. 66, No. 15, 2005

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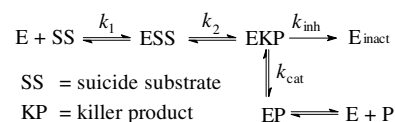
REVIEW

Mechanism-based inactivators of plant copper/quinone containing amine oxidases

pp 1751–1758

Silvia Longu, Anna Mura, Alessandra Padiglia, Rosaria Medda, Giovanni Floris\*

Suicide substrates forming killer products irreversibly inactivating plant amine oxidases are reviewed.



FULL PAPERS

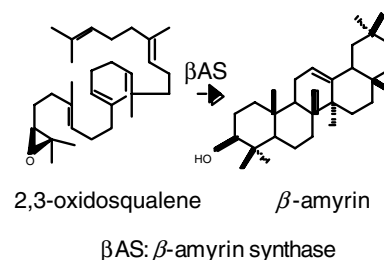
MOLECULAR GENETICS AND GENOMICS

Cloning and characterization of a cDNA encoding  $\beta$ -amyrin synthase from petroleum plant *Euphorbia tirucalli* L.

pp 1759–1766

Masataka Kajikawa, Katsuyuki T. Yamato, Hideya Fukuzawa, Yasuyoshi Sakai, Hidenobu Uchida, Kanji Ohyama\*

Identification of the protein encoded by a *Euphorbia tirucalli* cDNA as a  $\beta$ -amrin synthase was established by heterologous expression in the methylotrophic yeast *Pichia pastoris*.



Localization of polyketide synthase encoding genes to the toxic dinoflagellate *Karenia brevis*

pp 1767–1780

Richard V. Snyder, Maria A. Guerrero, Christopher D. Sinigalliano, Jamie Winshell, Roberto Perez, Jose V. Lopez, Kathleen S. Rein\*

Polyketide synthase genes amplified from non-axenic cultures of the brevetoxin producing dinoflagellate, *Karenia brevis* have been localized to *K. brevis* cells by FISH and flow-sorting followed by PCR.



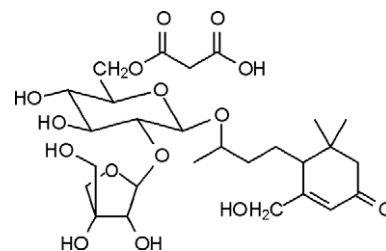
## METABOLISM

### Is stimulation of carotenoid biosynthesis in arbuscular mycorrhizal roots a general phenomenon?

pp 1781–1786

Thomas Fester\*, Victor Wray, Manfred Nimtz, Dieter Strack

Identification and quantification of cyclohexenone glycoside derivatives in mycorrhizal roots of *Lotus japonicus* revealed considerable concentrations of accumulating apocarotenoids. Application of norflurazon, a specific inhibitor of phytoene desaturase, showed the activation of carotenoid biosynthesis in mycorrhizal roots of all plant species examined.

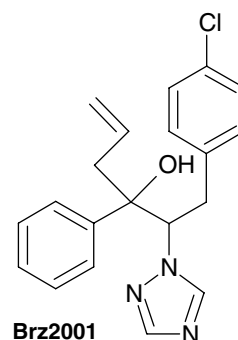


### Suppression of *Wolffia arrhiza* growth by brassinazole, an inhibitor of brassinosteroid biosynthesis and its restoration by endogenous 24-epibrassinolide

pp 1787–1796

Andrzej Bajguz\*, Tadao Asami

The effect of 24-epibrassinolide (epiBL) ( $10^{-13}$ – $10^{-6}$  M) and brassinazole (Brz2001) ( $10^{-6}$ – $10^{-4}$  M), a specific brassinosteroid biosynthesis inhibitor, on growth and levels of chlorophylls, carotenoids, sugars and protein in *Wolffia arrhiza* after 7 days of cultivation is reported. Application of epiBL ( $10^{-12}$ – $10^{-7}$  M) to *W. arrhiza* cultures stimulates the growth and chemical composition. The greatest effect of epiBL is observed at a concentration of  $10^{-9}$  M. Addition of Brz2001 to *W. arrhiza* cultures inhibits their growth. This inhibition of growth could be reversed by the addition of epiBL.

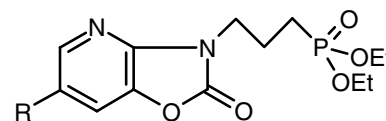


### Fosmidomycin analogues as inhibitors of monoterpenoid indole alkaloid production in *Catharanthus roseus* cells

pp 1797–1803

Zoia Mincheva, Martine Courtois, Françoise Andreu, Marc Rideau, Marie-Claude Viaud-Massuard\*

Substituted 3-[2-(diethoxyphosphoryl)propyl]oxazolo[4,5-*b*]pyridine-2(3*H*)-ones were obtained (R = aryl, vinyl, carbonyl chains) via reactions catalyzed with palladium. These fosmidomycin analogues inhibited the accumulation of indole alkaloids in periwinkle cells cultures (*Catharanthus roseus*).



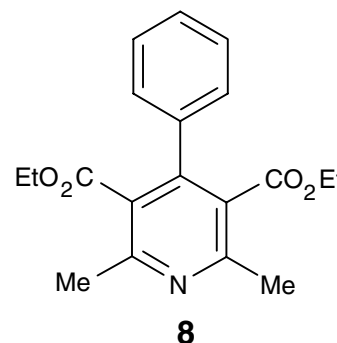
## BIOACTIVE PRODUCTS

### Multidrug resistance reversal agent from *Jatropha elliptica*

pp 1804–1811

Béatrice Marquez, Luc Neuville, Nicole J. Moreau\*, Jean-Pierre Genet, Aldenir Feitosa dos Santos, Maria Cristina Caño de Andrade, Antônio Euzébio Goulart Sant'Ana

Bioassay-guided fractionation of *Jatropha elliptica* extract led to 2,6-dimethyl-4-phenyl-pyridine-3,5-dicarboxylic acid diethyl ester (**8**). This compound acts as an inhibitor of the NorA efflux pump found in a multidrug resistant strain of *Staphylococcus aureus*.

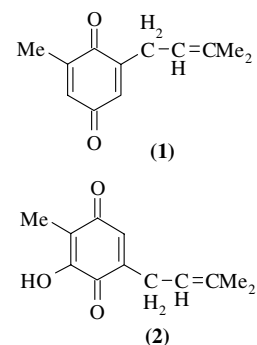


### Simple 1,4-benzoquinones with antibacterial activity from stems and leaves of *Gunnera perpersa*

Siegfried E. Drewes\*, Fatima Khan, Sandy F. van Vuuren, Alvaro M. Viljoen

Two 1,4 benzoquinones (**1,2**) from *Gunnera perpersa* are described. Compound **1** had excellent activity against *Staphylococcus epidermidis*.

pp 1812–1816



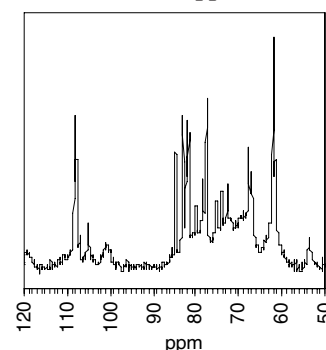
## CHEMISTRY

### Conformation and mobility of the arabinan and galactan side-chains of pectin

Marie-Ann Ha, Remco J. Viëtor, Gordon D. Jardine, David C. Apperley, Michael C. Jarvis\*

Solid-state  $^{13}\text{C}$  NMR spectra from hydrated primary cell walls of dicotyledonous plants contained well-resolved peaks assigned to the arabinan and galactan sidechains of pectin. In their thermal mobility and time-averaged conformations, these chains resembled the same polymers in aqueous solution. They may be described by the term ‘tethered solutes’.

pp 1817–1824

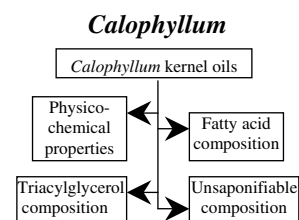


### Composition of fatty acids triacylglycerols and unsaponifiable matter in *Calophyllum calaba* L. oil from Guadeloupe

Sylvie Crane\*, Guylène Aurore, Henry Joseph, Zéphirin Mouloungui, Paul Bourgeois

Fatty acid, triacylglycerol and unsaponifiable components (sterols, tocopherols) were identified in the kernel oils of two *Calophyllum* species by using several chromatographic methods.

pp 1825–1831

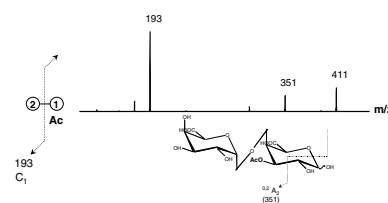


### Mapping sugar beet pectin acetylation pattern

Marie-Christine Ralet\*, Juan Carlos Cabrera, Estelle Bonnin, Bernard Quémener, Pilar Hellin, Jean-François Thibault

Partly methylated and/or acetylated oligogalacturonates were recovered after enzymatic hydrolysis of sugar beet pectin and purified by chromatographic means. Structural assignments were performed by ESI-IT MS<sup>n</sup>. A tentative mapping of the distribution of acetyl and methyl esters within sugar beet homogalacturonans is proposed.

pp 1832–1843

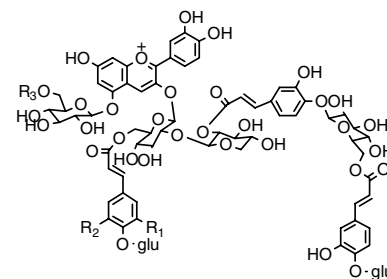


### Acylated anthocyanins from the violet-blue flowers of *Orychophragmus violaceus*

pp 1844–1851

Toshio Honda\*, Fumi Tatsuzawa, Nao Kobayashi, Hiroko Kasai,  
Seiji Nagumo, Atsushi Shigihara, Norio Saito

Three anthocyanins were isolated from *Orychophragmus violaceus*. Their structures were established by spectroscopic methods.

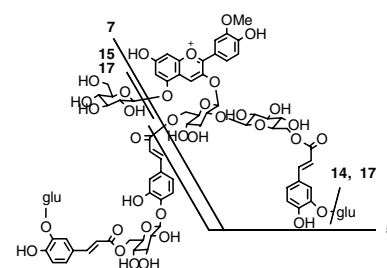


### Acylated peonidin glycosides from *duskish* mutant flowers of *Ipomoea nil*

pp 1852–1860

Norio Saito, Kenjiro Toki, Yasumasa Morita, Atsushi Hoshino, Shigeru Iida,  
Atsushi Shigihara, Toshio Honda\*

Acylated peonidin glycosides were isolated from the pale gray-purple flowers of a *duskish* mutant in Japanese morning glory. The mutation affecting glycosylation and acylation on the anthocyanin biosynthesis of the Japanese morning glory was discussed.



*Duskish-m* mutant anthocyanins of *Ipomoea nil*.

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