The cover illustrates glycolipids prepared as a stable Langmuir–Blodgett monolayer for immobilizing proteins or carbohydrates, as reported by S.-I. Nishimura et al. (p. 567).

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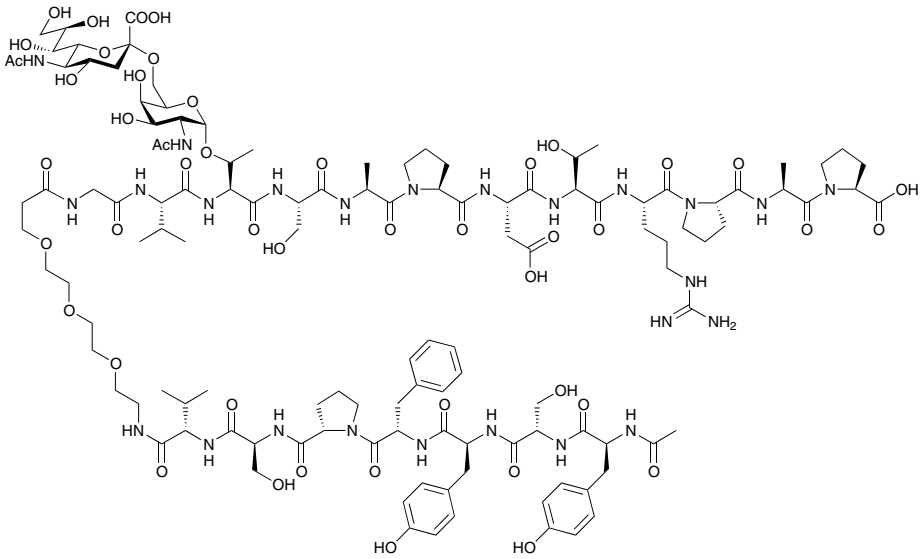
Reviews

Synthetic Glycopeptides for the Development of Antitumour Vaccines

Sebastian Dziadek, Carmen G. Espínola, Horst Kunz

Aust. J. Chem. **2003**, *56*, 519–543.

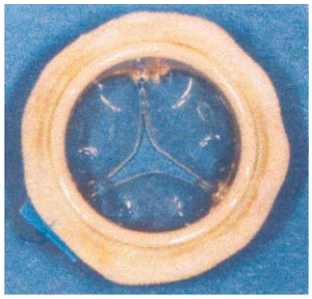
In the search for antitumour vaccines, glycopeptides containing tumour-associated saccharide antigens and peptide sequences may hold a key. This review covers a number of synthetic strategies to couple these disparate functionalities as well as how this can be achieved by means of solid-phase syntheses.



Designing Biostable Polyurethane Elastomers for Biomedical Implants

Pathiraja A. Gunatillake, Darren J. Martin, Gordon F. Meijs, Simon J. McCarthy, Raju Adhikari

Aust. J. Chem. **2003**, *56*, 545–557.



Synthetic elastomers as implantable medical components need have characteristics that impart good biological compatibility with the surrounding environment, including resistance to premature failure or degradation. Polyurethanes have enjoyed some success, particularly in cardiovascular applications, such as the heart valve shown in the graphic. Presented here are chemistry, synthesis, morphology, and mechanisms of polyurethane degradation, and recent advances in design and synthesis of new polyurethanes with improved biostability.

Current Chemistry

Trends in Chrysanthemic Acid Chemistry: A Survey of Recent Pyrethrum Syntheses

Stéphane Jeanmart

Aust. J. Chem. **2003**, *56*, 559–566.

Pyrethroic acids are essential constituent of the pyrethroids, which are some of the most powerful commercially available insecticides. This paper presents an overview of the recent trends in the field of chrysanthemic acid synthesis, showing the scope of organic chemistry involved.

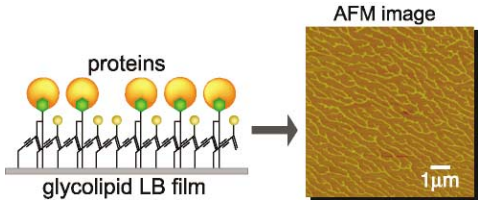
Full Papers

Synthesis of Photopolymerizable Glycolipids and their Application as Scaffolds To Immobilize Proteins with a Micron-Sized Pattern

Noriko Nagahori, Kenichi Niikura, Reiko Sadamoto, Kenji Monde, Shin-Ichiro Nishimura

Aust. J. Chem. **2003**, *56*, 567–576.

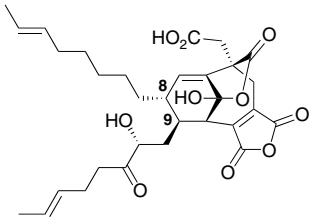
Carbohydrate-binding proteins immobilized on photopolymerized glycolipid thin films showed submicron-sized patterns such as dendrites, dots, and networks as observed by AFM; one such image is shown. Multiunit-type lectins immobilized on the film exhibited the ability to interact specifically with carbohydrate ligands by using unoccupied binding sites.



CP-225,917 and CP-263,114 Synthesis Support Studies: Testing a Radical Cyclization Strategy for Installation of the Side-Chains

Martin G. Banwell, Mark J. Coster, Alison J. Edwards, Markus Vögtle

Aust. J. Chem. **2003**, *56*, 577–583.

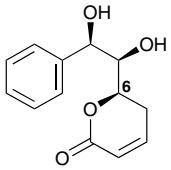


The phomoidrides, one of which is shown, act as rather potent inhibitors of Ras farnesyl transferase and are of interest as potential anti-tumour agents and regulators of cholesterol biosynthesis. Reported herein is a new synthetic strategy whose features could also enable construction of various polycyclic frameworks incorporating the vicinally and *trans*-related 'phomoidride-type' side-chains.

A Total Synthesis of the Styryllactone (+)-Goniodiol from Naphthalene

Martin G. Banwell, Mark J. Coster, Alison J. Edwards, Ochitha P. Karunaratne, Jason A. Smith, Lee L. Welling, Anthony C. Willis

Aust. J. Chem. **2003**, *56*, 585–595.



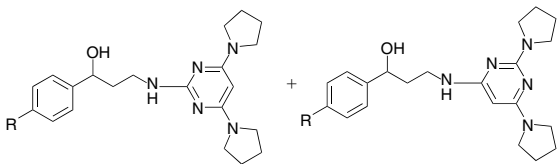
(+)-Goniodiol, a styryllactone that exhibits significant cytotoxicity against the A-549 human lung tumour cell line, has been synthesized from an enantiomerically pure compound which is available in multi-gram quantities by microbial dihydroxylation of naphthalene. This represents the first application of this abundant metabolite to the synthesis of a natural product, and serves to highlight the extraordinary utility of such enzymatically derived dihydrocatechols.

Arylpropanolamines Incorporating an Antioxidant Function as Neuroprotective Agents

Lida Joubran, W. Roy Jackson, Eva M. Campi, Andrea J. Robinson, Bradley A. Wells, Peter D. Godfrey, Jennifer K. Callaway, Bevyn Jarrott

Aust. J. Chem. **2003**, *56*, 597–605.

Structure–activity relationship studies for a series of arylpropanolamines (shown) indicate that their sodium channel blocking activity is largely independent of the aryl ring substituents, and is mainly associated with the aminopyrimidine moiety. Furthermore, the unsymmetrical pyrimidines were found to be more active antioxidants, while the least active were those that contained a strong electron-withdrawing substituent in the *para*-position.

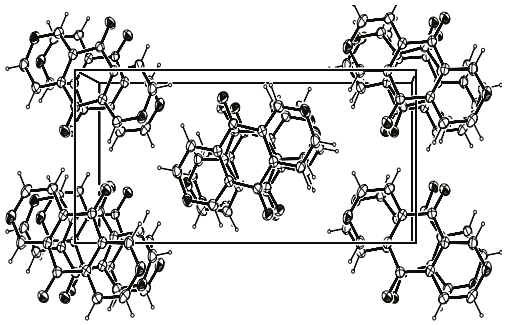


2,6-Diazaanthracene-9,10-dione and its Radical Anion—A Structural and Spectroscopic Investigation

Joy L. Morgan, Amar Flood, Keith C. Gordon, Henrik G. Kjaergaard, Brian H. Robinson, Jim Simpson

Aust. J. Chem. **2003**, *56*, 607–614.

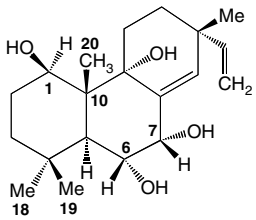
An analysis of the structure, vibrational and electronic spectra, and the molecular orbitals of 2,6-diazaanthracene-9,10-dione (DAAD) (1) and its radical anion is presented. There is good agreement between the calculated data and the experimental data of both (1) and $(1)^{-\bullet}$. Strong π-stacking is seen in the crystal structure of (1).



Sphaeropsidin F, a New Pimarane Diterpene Produced in Vitro by the Cypress Pathogen *Sphaeropsis sapinea* f. sp. *cupressi*

Antonio Evidente, Lorenzo Sparapano, Anna Andolfi, Giovanni Bruno, Andrea Motta

Aust. J. Chem. **2003**, *56*, 615–619.



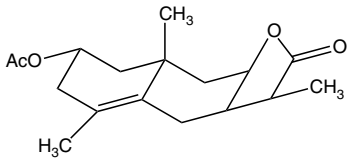
The isolation, structural elucidation, and biological characterization of sphaeropsidin F, shown, a new pimarane diterpene produced by *Sphaeropsis sapinea* f. sp. *cupressi* causing a canker form on cypress, is reported.

Short Communications

Sesquiterpene Lactones and other Constituents from the Aerial Parts of *Carpesium macrocephalum*

Chao Yang, Ying Zhu, Zhong-Jian Jia

Aust. J. Chem. **2003**, *56*, 621–624.



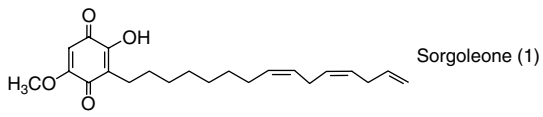
Carpesium macrocephalum has long been used in Chinese folk medicine for its hemostatic and antipyretic properties. Twelve compounds of interest have been isolated from this plant, two of them new (one shown in the graphic). The cytotoxic activities of four of these lactones are also reported.

Synthesis and Phytotoxicity Evaluation of Substituted *para*-Benzoquinones

Larissa S. Lima, Luiz Cláudio de A. Barbosa, Elson S. de Alvarenga, Antônio J. Demuner, Antônio A. da Silva

Aust. J. Chem. **2003**, *56*, 625–630.

Sorgoleone (structure shown), one of the major constituents of sorghum root exudates, is an allelochemical that reduces the growth of broad-leaf plants. The total synthesis of sorgoleone, as well as the influence of this family of *para*-benzoquinones on the development of radicle and aerial parts is reported.

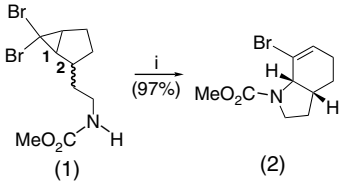


Focus

***gem*-Dihalocyclopropanes as Building Blocks in Natural Product Synthesis**

Rebecca M. Taylor

Aust. J. Chem. **2003**, *56*, 631.



gem-Dihalocyclopropanes (1), readily prepared by dihalocarbene addition to the corresponding alkene, engage in electrocyclic ring-opening processes to deliver an alkenyl halide moiety (2). The latter, in turn, participates in useful conversions such as Pd(0)-catalyzed cross-coupling reactions.

J. A. Gerrard
S. J. Angyal

Corrigendum

A. S. Cotterill, C. D. Donner, M. Gill, J. M. White, 'Pigments of Fungi. Part 70. Total Synthesis of (*R*)-Semixanthomegnin and the X-Ray Crystal Structure of (±)-7-Chloro-10-methoxy-3-methyl-3,4-dihydro-1*H*-naphtho[2,3-*c*]pyran-1,6,9-trione', *Aust. J. Chem*. **2003**, *56*, 49–57.

This manuscript was incorrectly flagged as a 'Short Communication' rather than as a 'Full Paper' in print. The editorial staff apologize for this oversight. The correct version appears at www.publish.csiro.au/journals/article.cfm?F=CH02169.pdf.

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