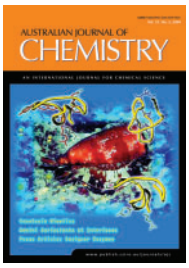

The cover shows a *Conus* snail and some peptide toxins, mimetics of which are reviewed by Baell, Duggan, and Lok (p. 179).

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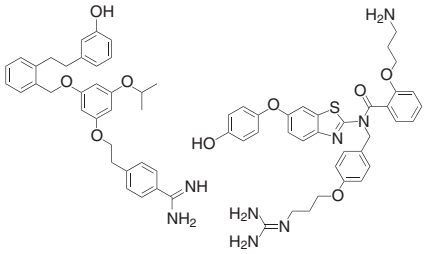
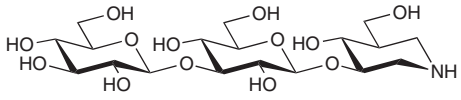
Review

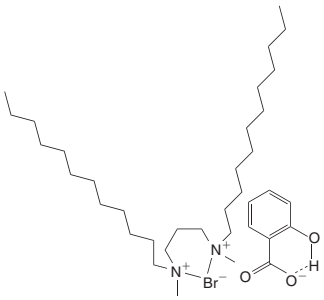


The venom found in *Conus* snails contains different sets of disulfide-rich peptides, termed conotoxins. The ω-conotoxins have been considered as potential therapeutics for the treatment of chronic pain. However, their mode of administration (spinal injection) has led to the quest for non-peptidic mimetics, which could ultimately provide a means for oral administration.

Rapid Communications

4-*O*-(β-Cellobiosyl)isofagomine is a striking inhibitor against the *endo*-cellulase Cel5A from *Bacillis agaradhaerens*. This paper describes the synthesis of two other such inhibitors, an example of which is shown here, by glycosylation of isofagomine at the C3 hydroxyl. The compound pictured was found to be a potent inhibitor of a barley 1,3-β-D-glucan *endo*-hydrolase (ID_{50} 3.1 μM).

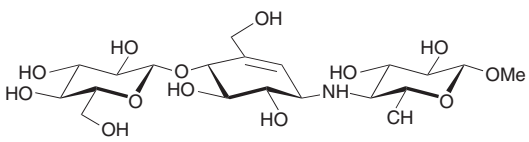




Halide and nitrate ions bind to gemini and trimer surfactants at an interface nearly independant of the degree of oligomerization of the surfactant. However, salicylate, shown in the graphic, markedly decreases in its uptake with increasing surfactant oligomerization but increases with increasing surfactant spacer length.

Full Papers

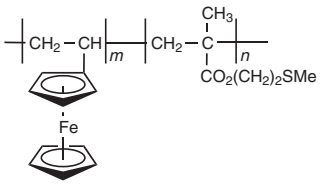
The inhibitory action of various imino sugars against some cellulases can be markedly improved upon by glycosylation. The authors describe their approaches toward the synthesis of a glycosylated version (such as that shown in the figure) of methyl β-acarviosin, in the hope of developing a potent inhibitor of cellulases.



Synthesis and Electrochemical Characterization of New Thioether- and Ferrocene-Containing Copolymers

Murray V. Baker, Jinzhen Lu, Touma B. Issa, Pritam Singh, Jelica Strauch

Aust. J. Chem. **2004**, *57*, 207–212.

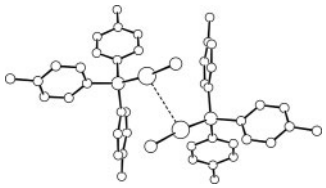


Surface-modified electrodes (SMEs) and their application in such areas as electrocatalysis, sensors, and energy conversion and storage constitute an active research area. Here, the synthesis of several new ferrocenyl copolymers is described, in the hope of developing sufficiently robust SMEs to serve as reference electrodes in acidic media.

Evidence for Au(I)···Au(I) Interactions in a Sterically Congested Environment: Two-Coordinate Gold(I) Halide Phosphine Complexes

Raymond C. Bott, Peter C. Healy, Graham Smith

Aust. J. Chem. **2004**, *57*, 213–218.

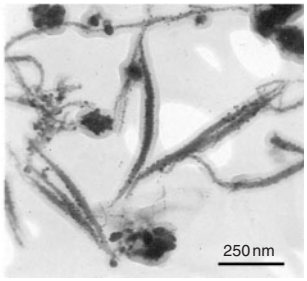


The two-coordinate complexes of gold(I) halides with the phosphine ligands tris(*n*-methylphenyl)phosphine ($n = 2, 4$) yield a diversity of polymorphic structures and crystal packing arrangements. Despite the bulkiness of the ligand, one polymorph of $[AuP(ptol)_3Cl]$ exhibits a short intermolecular Au(I)···Au(I) distance of 3.375(1) Å, indicative of a significant aurophilic interaction.

Biomimetic Synthesis of Ag_2CrO_4 Quasi-Nanorods and Nanowires by Emulsion Liquid Membranes

Lu Liu, Qingsheng Wu, Yaping Ding, Huajie Liu, Jingyu Qi, Qian Liu

Aust. J. Chem. **2004**, *57*, 219–222.

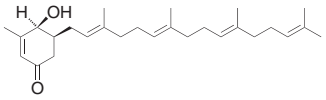


One-dimensional nanoscale semiconductor and photosensitive materials are currently of great interest due to their unique properties and potential applications. The authors report the first synthesis of the novel semiconductor and photosensitive material Ag_2CrO_4 (nanowires of which are shown) by emulsion–liquid membrane technology.

A New Ring-Reduced Tetraprenyltoluquinone and a Prenylated Xanthone from *Garcinia cowa*

Fatma Sri Wahyuni, Lindsay T. Byrne, Dachriyanus, Roza Dianita, Junuarty Jubahar, Nordin H. Lajis, Melvyn V. Sargent

Aust. J. Chem. **2004**, *57*, 223–226.

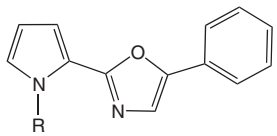


The isolation and structural elucidation of two new natural products from the stem bark of the tree *Garcinia cowa* are described. The reduced toluquinone pictured is particularly interesting since it appears to be the first time that this type of compound has been isolated from a terrestrial source.

Synthesis of a Novel Pyrrole Oxazole Analogue of the Insecticide Pirate

Wendy A. Loughlin, Michelle E. Murphy, Kathryn E. Elson, Luke C. Henderson

Aust. J. Chem. **2004**, *57*, 227–232.



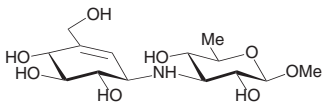
1 R = $CH_2OCH_2CH_3$
2 R = H

The expedient synthesis of the novel pyrrole oxazole **1** via the *N*-dealkylated pyrrole oxazole **2** in six steps from pyrrole is reported using a synthetic route that could have potential for the solution-phase combinatorial synthesis of analogues.

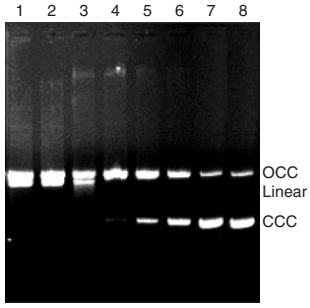
An Investigation into the Synthesis of Some Molecules Related to Methyl Acarviosin

Matthew J. McDonough, Robert V. Stick, D. Matthew G. Tilbrook, Andrew G. Watts

Aust. J. Chem. **2004**, *57*, 233–241.

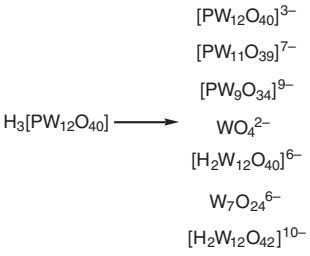


Acarbose is an impressive inhibitor of several enzymes that process substrates containing α-D-glucosidic linkages and, as such, is used in the treatment of various forms of diabetes. In an attempt to produce putative inhibitors for enzymes that process β-D-glucosidic linkages, the authors report an improved synthesis of a hydroxylated derivative of methyl β-acarviosin (shown).



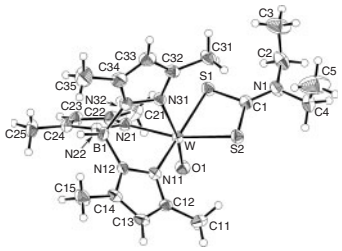
Naturally occurring antitumour antibiotics or their synthetic analogues are of use in chemotherapy owing to their ability to cause a variety of DNA lesions. This paper reports the synthesis of four new tripeptide–cytotoxic acid conjugates and their highly efficient cleavage of DNA, as shown in the graphic. Their mechanism of action is investigated by a variety of methods.

A quantitative analysis of Raman excitation profiles (REPs) for soluble *cis*-polyacetylene in toluene, the model conducting polymer, was undertaken on the basis of both static and dynamic approaches. The results obtained by these approaches are compared with the results of other studies of soluble and of solid *cis*- and *trans*-$(CH)_x$. The static approach fits the experimental data better than the dynamic approach.

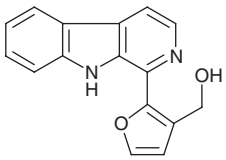


The base decomposition of α-$[PW_{12}O_{40}]^{3-}$ through ^{183}W and ^{31}P NMR spectroscopic measurements is reported. Although the system is dominated by the Keggin ion and the expected hydrolysis products, the measurements suggest that several new equilibrium species may result during the breakdown of the Keggin ion.

Short Communications

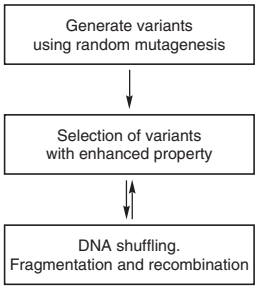


Oxo- and thio-Mo/W complexes with sulfur donor ligands are of interest due to their use in novel alkyne/S-donor ligand melding reactions leading to new coordination and organometallic species. Here, the missing member of the series $Tp^*ME(S_2CNEt_2)$ (M = Mo, W; E = O, S), namely $Tp^*WO(S_2CNEt_2)$, has been synthesized, and its X-ray structure is reported.



The β-carboline alkaloid family includes the alkoloid tribulusterine, present in the fruit of the medicinal plant *Tribulus terrestris* L. This alkaloid, originally thought to be 1-[(3-hydroxymethyl)-2-furyl]-9*H*-pyrido[3,4-*b*]indole (shown), is now shown to be the isomeric alkaloid perlolyrine.

Focus



An important task for the organic chemist is to form complex molecules, often with defined stereochemistries. This article examines the directed evolution method of enzyme engineering, a random approach to generating enzyme diversity that imitates nature's own method of adaptation and evolution.

Book Review

page 278

Author Index