

The cover shows, overlaid on a brain scan of dopamine activity, L-dopa and a dopa-containing peptide (ustiloxin D) from the report by Hunter and Hutton (p. 1095) (artwork by Jo Dalvean).

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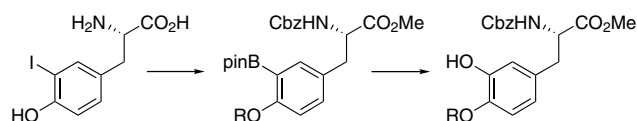
Full Papers

Preparation of Selectively Protected L-Dopa Derivatives: Oxidation of Tyrosine-3-boronates

Luke Hunter, Craig A. Hutton

Aust. J. Chem. **2003**, 56, 1095–1098.

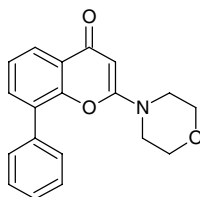
Conversion of 3-iodo-L-tyrosine to protected tyrosine-3-boronate derivatives, followed by oxidation with hydrogen peroxide, provides a mild and efficient method for the preparation of selectively protected L-dopa derivatives.



Synthetic Studies of the Phosphatidylinositol 3-Kinase Inhibitor LY294002 and Related Analogues

Belinda Abbott, Philip Thompson

Aust. J. Chem. **2003**, 56, 1099–1106.



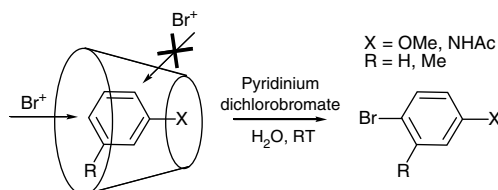
Many cellular signalling pathways involving phosphatidylinositol 3-kinases have been elucidated by the use of the inhibitor LY294002 (shown). To enable structure–function studies of LY294002 and analogues, concise synthetic methodologies amenable to parallel synthesis have been developed which utilize Suzuki coupling of arylboronates to triflate- or bromo-substituted morpholinochromone intermediates.

Effect of Cyclodextrins on Electrophilic Aromatic Bromination in Aqueous Solution

Paul G. Dumanski, Christopher J. Easton, Stephen F. Lincoln, Jamie S. Simpson

Aust. J. Chem. **2003**, 56, 1107–1111.

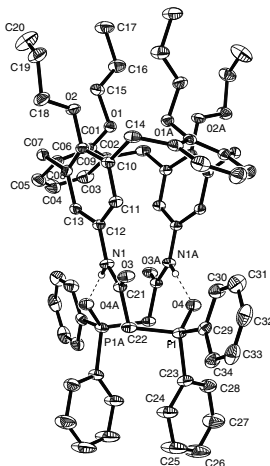
Cyclodextrins act as molecular reactors to change the ratios of the products of reactions of anisole, 3-methylanisole, acetanilide, and 3-methylacetanilide with pyridinium dichlorobromate. Yields of the 4-substituted products are increased and the quantities of by-products formed are substantially reduced.



Synthesis and Extraction Behaviour of Calix[4]arenes Partially Substituted at the Wide Rim by Carbamoylmethylphosphine Oxide (CMPO) Functions

Françoise Arnaud-Neu, Silvia Barbosa, Volker Böhmer, Frédéric Brisach, Laetitia Delmau, Jean-François Dozol, Oliver Mogck, Erich F. Paulus, Mohamed Saadioui, Alexander Shivanyuk

Aust. J. Chem. **2003**, 56, 1113–1119.



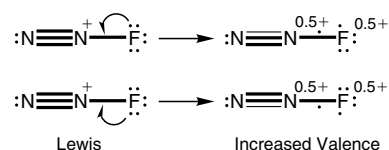
From one to four CMPO functions, known to coordinate strongly to lanthanides and actinides, were attached to the wide rim of calix[4]arenes. The structure of the 1,3-di-CMPO derivative was confirmed by single crystal X-ray analysis. Liquid/liquid extraction studies of selected lanthanides and actinides show by far the best efficiency and selectivity for the tetra-CMPO derivative.

Valence Bond Studies of N_2F^+

Richard D. Harcourt

Aust. J. Chem. **2003**, 56, 1121–1125.

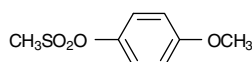
The results of STO-6G valence bond calculations for the linear cation N_2F^+ show that (a) the primary Lewis-type VB structures involve a single positive charge which is located on either of the nitrogen atoms, and (b) a small amount of N–F π -bonding arises primarily from the formation of one-electron N–F π -bonds, as occurs in increased valence structures.



Selected Sulfonyl Compounds as Anticancer/Antimalarial Agents

Richard F. Langler, Robert L. Paddock,
David B. Thompson, Ian Crandall,
Michelle Ciach, Kevin C. Kain

Aust. J. Chem. **2003**, 56, 1127–1133.



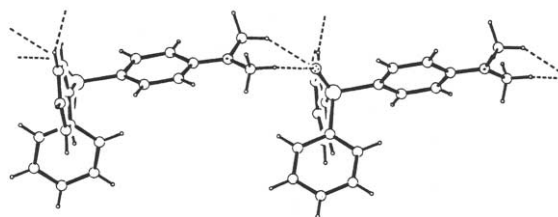
Recent reports indicate that malaria mortality is escalating, but to have real value, novel antimalarial agents must be inexpensive. The authors report that *p*-methoxyphenyl *p*-toluenesulfonate (shown) is a very selective and effective antimalarial agent, which also shows pronounced activity against human skin cancer cells. Moreover, it can be prepared in two steps from commercially available hydroquinone.

[4-(*N,N*-Dimethylamino)phenyl]-diphenylphosphine Oxide and its Partial Oxides: An Isomorphous Crystal Series

Daniel E. Lynch, Graham Smith,
Karla A. Byriel, Colin H. L. Kennard

Aust. J. Chem. **2003**, 56, 1135–1139.

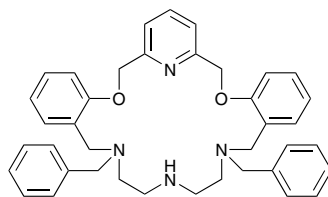
The syntheses and single-crystal X-ray structure determinations of the title oxide (dappo) and its partial oxides (in which the oxygen has 50% and 25% occupancy, respectively) is described. Dappo forms an extended two-dimensional C–H...O hydrogen-bonded array, indicating its added potential compared with triphenylphosphine oxide as a crystallizing aid in crystal chemistry.



New Macrocyclic Ligands. XVI. Synthesis of a Series of *N*-Benzylated Macrocycles Incorporating N_4O_2 -Donor Sets

Ronald R. Fenton, Leonard F. Lindoy,
Jason R. Price, Brian W. Skelton,
Allan H. White

Aust. J. Chem. **2003**, 56, 1141–1145.

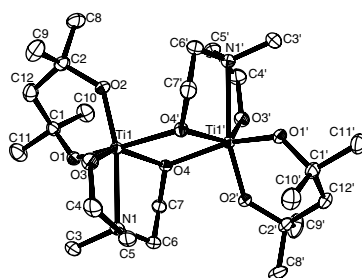


A new set of tools for use in metal-ion recognition studies is presented here. The synthesis of five 20-membered, *N*-benzylated macrocyclic ligands incorporating N_4O_2 -donor sets and from one to three benzyl substituents is reported (one such example is shown). The synthesis involved either modification of the pre-formed macrocycle or macrocyclic ring closure using the appropriate benzylated precursors.

Influence of Ligand Architecture on Bridging Bond Strength in Dimeric Titanium Aminoalkoxy-Diolates

Tim Kemmitt, Graeme J. Gainsford,
Najeh I. Al-Salim,
Hana Robson-Marsden,
Denis V. Sevast'yanov

Aust. J. Chem. **2003**, 56, 1147–1152.

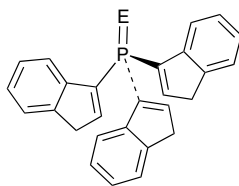


The physical properties of metal complexes can be controlled by the design of the ligand set. Highly methylated ligands reduce intermolecular attractions, allowing improved volatilization characteristics. Increasing the bite angle of O–O chelates on *N*-methyldiethanolamine-coordinated dimeric titanium complexes increased intramolecular interactions, thereby lengthening the Ti–O bridging bond lengths. This resulted in monomerization in the vapour phase.

Oxide, Sulfide, Selenide, and Borane Derivatives of Indenylphosphines

Julian J. Adams, David E. Berry,
Owen J. Curnow, Glen M. Fern,
Michelle L. Hamilton, Heather J. Kitto,
J. Robert Pipal

Aust. J. Chem. **2003**, 56, 1153–1160.

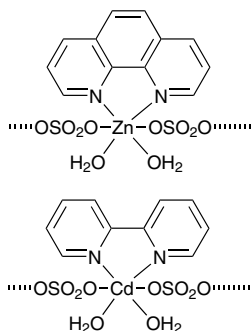


A linear relationship of the ^{31}P NMR chemical shift with the number of indenyl substituents was observed for catalytically interesting indenylphosphine derivatives. 1-Indenyl derivatives (shown, $\text{E} = \text{O}, \text{S}, \text{Se}$) were highly predictable, whereas 3-indenyl groups were more variable, presumably due to π -donor effects.

Weak C–H...O Interactions Leading to Measurable Effects in Polymeric Sulfates $[\text{M}(\text{SO}_4)_2\text{L}(\text{H}_2\text{O})_2]_n$ ($\text{M} = \text{Cd}, \text{Zn}, \text{Cu}$; $\text{L} = \text{bpy}, \text{phen}, \text{dmp}$)

Miguel Angel Harvey, Sergio Baggio,
María Teresa Garland, Ricardo Baggio

Aust. J. Chem. **2003**, 56, 1161–1165.

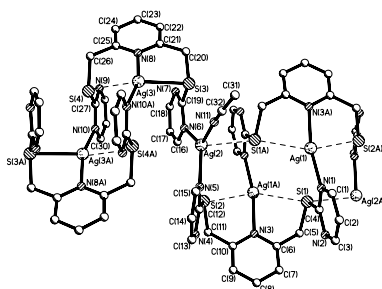


The title compounds organize into double polymeric chains internally linked through strong $(\text{O}-\text{H})_{\text{water}} \cdots \text{O}_{\text{sulfate}}$ bonds. The interaction between these ‘strips’ is governed by weak $(\text{C}-\text{H})_{\text{ligand}} \cdots \text{O}_{\text{sulfate}}$ bonds, which explains a seemingly abnormal expansion/contraction of some cell parameters in the homologous series.

Syntheses and Crystal Structures of Silver(I) Organosulfur Polymers as One-Dimensional Chains

Ruihu Wang, Maochun Hong,
Weiping Su, Rong Cao, Yingjun Zhao,
Jiabao Weng

Aust. J. Chem. **2003**, 56, 1167–1171.



Two silver(I) organosulfur coordination polymers, prepared by self-assembly of silver(I) with either of the chelating ligands mbpsq and bpsp (mbpsq = 2,3-bis[2-(4-methylpyrimidinyl)methylsulfanyl]-quinoxaline; bpsp = 2,6-bis[(2-pyrimidinyl)methylsulfanyl]-pyridine), both crystallize to form chains. The mbpsq is hexadentate and bridges two silver(I) centres. The bpsp molecules ligate silver(I) in a tridentate and tetradentate manner to form a one-dimensional zigzag chain, as shown.

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