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Full Papers

Unusual Terpyridines as Ligands for Novel Light-Emitting Iridium(III) Complexes: Synthesis and Characterization

Andreas Winter, Christoph Ulbricht,
Elisabeth Holder, Nikolaus Risch,
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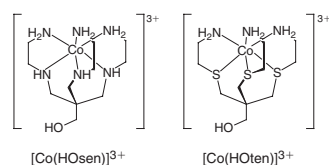
Aust. J. Chem. **2006**, *59*, 773–782.

A novel series of light-emitting iridium(III) complexes was synthesized on the basis of S-shaped terpyridines. In view of potential applications in the field of organic light-emitting diodes, the photophysical and electrochemical properties were examined. The complexes showed good thermal stability and strong emissions with maxima between 538 and 600 nm.

Cobalt Complexes of Tripodal Hexadentate Ligands: Electrochemically Driven Rearrangements

Paul V. Bernhardt, Yang Kim, Sujandi

Aust. J. Chem. **2006**, *59*, 783–790.



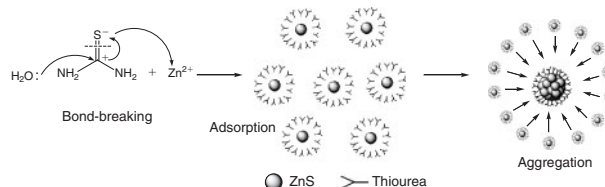
The Co^{III} complexes [Co(HOsen)]³⁺ (N₆ donor set) and [Co(HOten)]³⁺ (N₃S₃ donor set) are structurally very similar and represent useful precursors for functionalized macrobicyclic cage complexes. The importance of the donor set is highlighted by the N₃S₃-coordinated compound unexpectedly exhibiting some extraordinary electrochemistry that involves dissociation and transmetalation with mercury ions upon reduction to Co^{II}, while the electrochemistry of the N₆ analogue is totally reversible.

Low-Temperature Synthesis of Nearly Monodisperse ZnS Nanospheres Using a Facile Solution-Phase Approach

Weizhi Wang, Liyong Chen, Shutao Wang,
Baojuan Xi, Shenglin Xiong, Yitai Qian,
Zude Zhang

Aust. J. Chem. **2006**, *59*, 791–795.

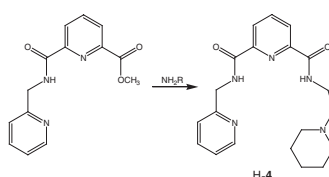
Zinc sulfide is an important semiconductor with many applications due to its distinguished photoelectron transfer capability. Nearly monodisperse ZnS nanospheres, with an average diameter of 150 nm, have been prepared through a facile and controllable solution-phase process at low temperature (80°C). In the process, thiourea is used both as a sulfur source and as a capping ligand which can direct initially formed ZnS particles to aggregate into nanospheres.



Methyl 2-[N-(2'-Pyridylmethyl)-carbamyl]pyridine-6-carboxylate: A Precursor for Unsymmetrical Diamide Ligands

Mery Napitupulu, Geoffrey A. Lawrance,
Guy J. Clarkson, Peter Moore

Aust. J. Chem. **2006**, *59*, 796–804.

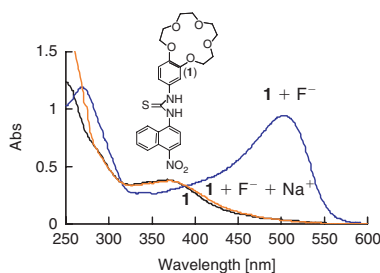


Synthesis of the title compound provides a new precursor for developing unsymmetrical ligands, which are attracting attention because their low symmetry may play a role in stereochemical control in reactions. Further reaction with a different amine produces unsymmetrical diamides with an R-NH-CO-py-Co-NH-R' structure, such as H₂4. Complexation chemistry is also investigated.

A Colorimetric Ditopic Receptor Modulated by Fluoride Anion and Sodium Cation Binding

Yao-Pin Yen, Chia-Lan Chen,
Tung-Ming Fu, Chen-Yu Wu,
Chi-Yung Lin

Aust. J. Chem. **2006**, 59, 805–811.

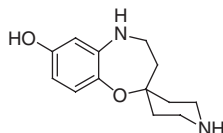


The synthesis and characterization of a new colorimetric ditopic receptor **1** capable of acting as an ON/OFF switch controlled by anion/cation detection is reported. A solution of receptor **1** with F^- shows a colour change from light-yellowish to orange-red (ON) detectable by the naked eye. Subsequent addition of Na^+ or Li^+ results in loss of the orange-red colour (OFF).

Synthesis of New Substituted 4,5-Dihydro-3H-spiro[1,5]-benzoxazepine-2,4'-piperidine and Biological Properties

Younes Laras, Nicolas Pietrancosta,
Vincent Moret, Sylvain Marc,
Cédrik Garino, Amandine Rolland,
Valérie Monnier, Jean-Louis Kraus

Aust. J. Chem. **2006**, 59, 812–818.



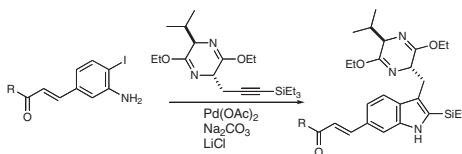
Spiro-benzoxazepine represents an interesting scaffold for the elaboration of a library of bioactive compounds, since it is considered by medicinal chemists as a privileged structure. We report here an efficient method to synthesize the key intermediate shown, which can be selectively and orthogonally protected in order to introduce a diverse substituents. The compounds were primarily tested as aspartyl protease inhibitors.

Preparation of the Central Tryptophan Moiety of the Celogentin/Moroidin Family of Anti-Mitotic Cyclic Peptides

Alexander K. L. Yuen, Katrina A. Jolliffe,
Craig A. Hutton

Aust. J. Chem. **2006**, 59, 819–826.

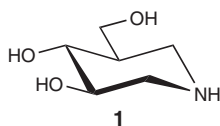
Moroidin and the celogentins comprise a family of complex, bicyclic peptide natural products with potent anti-mitotic activity. The central 2,6-difunctionalized tryptophan core of the celogentin/moroidin family has been prepared, employing a Larock annulation as the key step. Elaboration of this route should enable preparation of the Leu-Trp fragment and ultimately a synthesis of these natural products.



Improvements to the Synthesis of Isofagomine, Noeuromycin, Azafagomine, and Isofagomine Lactam, and a Synthesis of Azanoeuromycin and 'Guanidine' Isofagomine

Peter J. Meloncelli, Robert V. Stick

Aust. J. Chem. **2006**, 59, 827–833.



Isofagomine **1** is a powerful inhibitor of various enzymes that hydrolyze the glycosidic linkage and has the potential to be developed into a therapeutic for associated diseases. Here, through a common intermediate, we improve the synthesis of **1** and develop syntheses of related and novel molecules. Some of these aza sugars are ideal candidates for structural investigations into the mechanism of action of glycoside hydrolases.

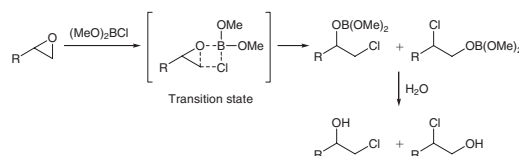
Communications

Regioselective Conversion of Unsymmetrical Terminal Epoxides into Vicinal Chlorohydrins Using Dimethoxyboron Chloride

Chandra D. Roy

Aust. J. Chem. **2006**, 59, 834–836.

Halohydrins are highly versatile intermediates in the synthesis of marine natural products and pharmaceuticals. A simple and efficient regioselective cleavage of terminal epoxides utilizing dimethoxyboron chloride is described. Easy reagent synthesis, excellent yield, and high regioselectivity, should make this method useful in organic synthesis.



A Green Protocol for Synthesis of Bis-indolylmethanes and Bis-indolylglycoconjugates in the Presence of Iron(III) Fluoride as a Heterogeneous, Reusable, and Eco-Friendly Catalyst

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Satish B. Suryawanshi, Sudhir N. Bavikar

Aust. J. Chem. **2006**, 59, 837–840.

Iron(III) fluoride in catalytic amounts has been reported as a mild, cheap, and commercially available catalyst under solvent-free conditions. Iron(III) fluoride is shown to convert aldehydes, ketones, and sugar aldehydes into bis-indolylmethanes and bis-indolyl glycoconjugates in good yields.

