

# AUSTRALIAN JOURNAL OF CHEMISTRY

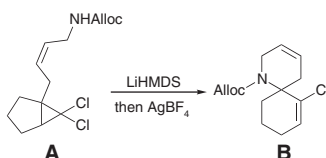
AN INTERNATIONAL JOURNAL FOR CHEMICAL SCIENCE

## Full Papers

### Assembly of the 1-Azaspiro-[5.5]undecane Framework Associated with Perhydrohistrionicotoxin via Electrocyclic Ring-Opening of a Ring-Fused *gem*-Dichlorocyclopropane and Trapping of the Resulting $\pi$ -Allyl Cation by a Tethered, Nitrogen-Centered Nucleophile

Martin G. Banwell, Florian Vogt,  
Angela W. Wu

*Aust. J. Chem.* **2006**, 59, 415–425.

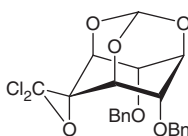


Treatment of the *gem*-dichlorocyclopropanone **A** under the conditions shown affords compound **B** incorporating the 1-azaspiro[5.5]undecane framework associated with the alkaloid histrionicotoxin.

### An Expansion of the Role of the Corey–Link Reaction for the Synthesis of $\alpha$ -Substituted Carboxylic Acid Esters

Adrian Scaffidi, Brian W. Skelton,  
Robert V. Stick, Allan H. White

*Aust. J. Chem.* **2006**, 59, 426–433.

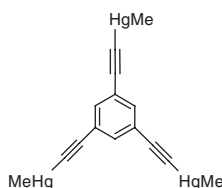


The modified Corey–Link reaction provides an important route to  $\alpha$ -amino acids and their derivatives. Herein a variation of the method to provide other  $\alpha$ -substituted carboxylic acid esters is reported. This work also casts some light on the lack of reactivity (towards nucleophilic substitution) of interesting molecules, such as the one shown.

### Synthesis, Characterization, and Photophysics of a New Trinuclear Mercury(II) Complex of 1,3,5-Triethynylbenzene

Li Liu, Wai-Yeung Wong,  
Cheuk-Lam Ho

*Aust. J. Chem.* **2006**, 59, 434–438.



The heavy atom in transition metal complexes allows the spin-forbidden triplet emission, and as such are of interest in light-emitting diode applications. The title group 12 ion and triacetylide ligand form a complex (shown) that possesses a high-energy triplet state at 2.82 eV and a singlet–triplet gap of 0.73 eV. Also reported is the isolobal analogue,  $[\text{Au}(\text{PPh}_3)]^+$ , which is still more efficient.

### Synthesis and Characterization of $\alpha,\beta$ -Unsaturated Hydroximoyl Chlorides and Hydroximates

James E. Johnson, Ling Lu,  
Houquan Dai, Diana C. Canseco,  
Krista M. Small, Debra D. Dolliver,  
Frank R. Fronczek

*Aust. J. Chem.* **2006**, 59, 439–444.

All four configurational isomers (*ZZ*, *ZE*, *EZ*, *EE*) of an  $\alpha,\beta$ -unsaturated  $\beta$ -chlorohydroximoyl chloride have been synthesized and identified. The identification was accomplished through chemical reactions and NMR spectroscopy. These compounds can be used for mechanism studies on acid-catalyzed isomerization of imines.

### Synthesis and Biological Activity of Allosteric Modulators of GABA<sub>B</sub> Receptors, Part 1. *N*-(Phenylpropyl)-1-arylethylamines

David I. B. Kerr, Jennifer Ong,  
Michael V. Perkins, Rolf H. Prager,  
Ni Made Puspawati

*Aust. J. Chem.* **2006**, 59, 445–456.

A new series of fendiline analogues and derivatives of the title compound were prepared for evaluation as positive allosteric modulators of  $\gamma$ -aminobutyric acid<sub>B</sub> (GABA<sub>B</sub>) receptors. The most active was *N*-(3,3-diphenylpropyl)-1-(3-chloro-4-methoxyphenyl)ethylamine. Such modulators may represent a novel therapeutic strategy for treatment of neurological diseases without the side effects of full GABA<sub>B</sub> receptor agonists.

### Synthesis and Biological Activity of Allosteric Modulators of GABA<sub>B</sub> Receptors, Part 2. 3-(2,6-Bis-*tert*-butyl-4-hydroxyphenyl)propanols

David I. B. Kerr, Jabbar Khalafy,  
Jennifer Ong, Michael V. Perkins,  
Rolf H. Prager, Ni Made Puspawati,  
Mehdi Rimaz

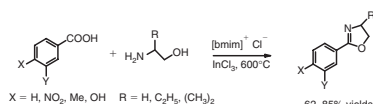
*Aust. J. Chem.* **2006**, 59, 457–462.

In the second of two papers, a new series of 2,2-disubstituted 3-(3,5-di-*t*-butyl-4-hydroxyphenyl)propan-1-ol derivatives have been prepared for evaluation as allosteric modulators of moderately active GABA<sub>B</sub> receptors, but which are limited at this stage by very poor solubility. The activity was greatest for the cyclohexyl and cyclopentyl analogues.

### An Efficient, Eco-Friendly, One-Pot Protocol for the Synthesis of 2-Oxazolines Promoted by Ionic Liquid/Indium Chloride

R. Kamakshi, Boreddy S. R. Reddy

*Aust. J. Chem.* **2006**, 59, 463–467.

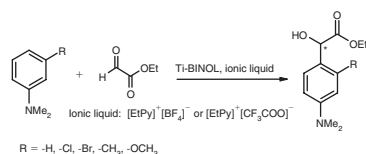


The synthesis of substituted 2-oxazolines in ionic liquid/ $\text{InCl}_3$  media affords products in good yield and purity, and provides an environmentally friendly route to these synthetically useful compounds. Both the amide bond formation and cyclic dehydration are achieved using this single-pot synthesis. The reaction mechanism and procedure optimization is discussed.

### Enantioselective Friedel–Crafts Reactions of Aromatic Amines with Ethyl Glyoxylate in Pyridinium-Based Ionic Liquids

Sanjay V. Malhotra, Ying Xiao

*Aust. J. Chem.* **2006**, 59, 468–472.



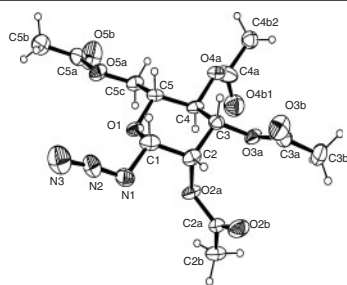
Ionic liquids provide a viable alternative to conventional organic solvents to carry out asymmetric reactions. This has been demonstrated with a study of the enantioselective Friedel–Crafts reaction of aromatic amines with ethyl glyoxylate in pyridinium-based ionic liquids. Results show that these solvents provide a suitable medium for the reaction to achieve high efficiency in terms of yield and enantioselectivity.

## Communication

### Determination of the Anomeric Configurations of 2,3,4,6-Tetra-*O*-Acetyl- $\beta$ -Mannopyranosyl Azide

Kelly L. Cosgrove, Paul V. Bernhardt,  
Benjamin P. Ross, Ross P. McGeary

*Aust. J. Chem.* **2006**, 59, 473–476.



The synthesis of biologically important glycosylamines and -amides often proceeds through a glycosyl azide intermediate. The anomeric configurations of two previously reported azides has been unclear; combination of crystallographic and NMR techniques clarified the stereochemistry at C1.