The occurrence of preterm birth comes at a large social and economic cost. The discovery of CRH, and exploitation of its biological action, is one of the most promising strategies in reducing its incidence. This review explores the development of peptidic and non-peptidic compounds as CRH1 receptor agonists.

The X-ray crystal structure of a self-assembling, charge-neutral, tetracadmium(II) 2 × 2 grid is reported. 1H NMR spectroscopy indicates that the solid-state structure is retained in methanol solution, and electrospray mass spectrometry indicates this is the dominant species in equilibrium with lower molecular weight oligomers.

High-resolution NMR studies of the antibiotic virginiamycin M₁ establish that its conformation in solution is significantly different from the X-ray crystal structure of the form bound to the 50S ribosome and to the active site of a streptogramin acetyltransferase.
Full Papers

Terpyridine-Ruthenium Complexes as Building Blocks for New Metallo-Supramolecular Architectures
Harald Hofmeier, Philip R. Andres, Richard Hoogenboom, Eberhardt Herdtweck, Ulrich S. Schubert

A series of asymmetric terpyridine-ruthenium(II) complexes has been prepared and characterized by various techniques including two-dimensional ¹H-NMR spectroscopy and, in one particular case, X-ray structure analysis. Various functional groups have been introduced, which possess the potential for the construction of supramolecular architectures and polymers.

Non-CNS Acting Opiates Bearing Guanidino Substituents
Kamani R. Subasinghe, W. Roy Jackson, Jacqui F. Young, Maria Papanastasiou, Bevyn Jarrott

A range of modified opiates containing highly basic guanidine groups, which are protonated at body pH, has been prepared. Preliminary pharmacological evaluation shows that the compounds retain analgesic activity but are prevented from entering the central nervous system, thus eliminating many of the undesirable side effects associated with opiate use.

Stereoselective Synthesis of the Hydrophobic Side Chain of Scyphostatin
Ryukichi Takagi, Shinjirou Tsuyumine, Hiroko Nishitani, Wataru Miyanaga, Katsuo Ohkata

The synthesis of the hydrophobic side chain of the biphilic natural product scyphostatin involves enzymatic asymmetric acetylation of a meso-diol, a Negishi coupling reaction, and construction of the triene moiety by a Horner–Wadsworth–Emmons olefination. The differences in optical rotation values of the geometric isomers (2′E,4′E,6′E)-, (2′Z,4′E,6′E)-, (2′E,4′Z,6′E)-, and (2′E,4′E,6′Z)-ethyl ester are also described.

The Synthesis of a D-Glucose-like Piperidin-2-one: Isofagomine Lactam
James M. Macdonald, Robert V. Stick

Glycono lactams are enzyme inhibitors whose potency increases markedly when the N atom and C=O groups are in the pseudo-anomeric and C2 positions, respectively. As a precursor to D-glucosyl isofagomine lactam 1, the authors report the synthesis of isofagomine lactam 2. Hydrogenolysis, oxidation, and methanolysis of the 2,3-di-(tert-butyldimethylsilyl) derivative of benzyl 4-cyano-4-deoxy-D-arabinoside yielded a methyl ester. Reduction and deprotection then furnished 2.

Intramolecular Interactions in Carbenes Derived During the Pyrolysis of N-Alkenylisoxazolones
Matthew Cox, Michael Dixon, Troy Lister, Rolf H. Prager

While the pyrolysis or photolysis of N-(1-alkenyl)isoxazolones generally proceeds through a carbene intermediate and gives pyroles, alternate pathways were observed. These pathways may involve solvent capture by the triplet state, carbene rearrangement, or a [1,4]- then [1,3]- then cyclization cascade (as shown) to form a quinolone. This paper explores an alternate pathway involving the capture of the carbene by the carbonyl oxygen of esters and amides.
Some Stereochemical Aspects of the Strecker Synthesis and the Bucherer–Bergs Reaction

Urs D. Wermuth, Ian D. Jenkins, Raymond C. Bott, Karl A. Byriel, Graham Smith


Aracyl Triflates as Derivatizing Agents for Biological Betaines

D. Alan R. Happer, Colin M. Hayman, Malina K. Storer, Michael Lever


The Action of Vanadium Oxytrifluoride on N-Arylbenzylamines—a Route to Some Phenanthridines

Andris J. Liepa, Roland N. Nearn, Denis M. J. Wright


Octahedral Complexes of a Mixed N,N,O-Donor Ligand N-trans-(2’-hydroxycyclohexyl)-2-aminomethylpyridine

Mark J. Robertson, Geoffrey A. Lawrance, Marcel Maeder, Peter Turner


The Role of Hydrogen Bonding in the Intramolecular Cyclization of Carbenes

David W. Jeffery, Troy Lister, Rolf H. Prager


The Reaction of Highly Hindered Silicon Halides with Nucleophiles

Janine K. Galligan, D. Alan R. Happer, Gareth R. S. Wilson

Short Communications

The trans-[py2AlCl4]- (‘py’ = pyridine) Anion, Structurally Characterized in Two Pyridinium Salts

Peter C. Junk, Colin L. Raston, Brian W. Skelton, Allan H. White


Coordination Complexes of Tin(IV) Chloride with Unidentate Nitrogen Bases

Warren A. Grigsby, Travis S. Morien, Colin L. Raston, Brian W. Skelton, Allan H. White


Focus

Analysis of Ionic Liquids and Dissolved Species by Electrospray Ionization MS

Dongbin Zhao


Electrospray ionization mass spectrometry is a useful tool for the detection and identification of many species, including transition metal based catalysts and ionic liquids, and ionic liquids are attracting increasing interest as solvents for multiphase catalysts. This article reports the characterization of a ruthenium catalyst immobilized in an ionic liquid (shown) and compares the ionic liquid synthesis by two different routes.

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