10.1071/CHv58n2toc

Volume 58, Number 2, 2005, v

The interstellar medium shows about 300 features in its optical absorption; carbon chains are thought to be one contributor to these bands. Learn more in the Review by Schmidt and Sharp (p. 69).

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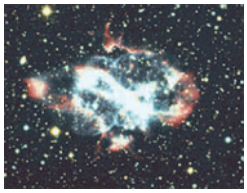
Review

The Optical Spectroscopy of Extraterrestrial Molecules

Timothy W. Schmidt, Robert G. Sharp

Aust. J. Chem. **2005**, *58*, 69–81.



The slow, ion–molecule and neutral–radical chemistry of interstellar space differs from that of laboratory experience. Identifying the interstellar medium with the tools of electronic spectroscopy is complicated by the presence of the still-unidentifed Diffuse Interstellar Bands.

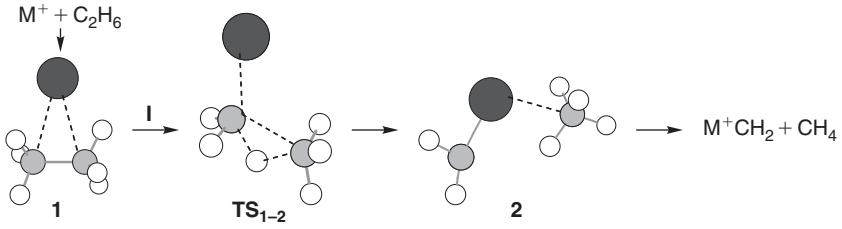
Rapid Communication

A New Pathway for Activation of C–C and C–H Bonds by Transition Metals in the Gas Phase

Dongju Zhang, Ruoxi Wang, Rongxiu Zhu

Aust. J. Chem. **2005**, *58*, 82–85.

Novel mechanisms for the activation of C–C and C–H bonds in ethane upon reaction by Ti^+, V^+, and Fe^+ in the gas phase have been discovered using high-level density functional calculations. Two new pathways are proposed: the concerted activation of C–C and C–H bonds (shown) and 1,2-H_2 elimination.



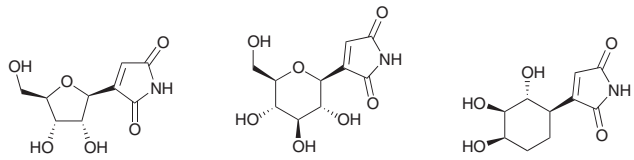
Full Papers

The Synthesis and Biological Evaluation of Two Analogues of the *C*-Riboside Showdomycin

Jens Renner, Irma Kruszelnicki, Beata Adamiak, Anthony C. Willis, Edward Hammond, Stephen Su, Christopher Burns, Edward Trybala, Vito Ferro, Martin G. Banwell

Aust. J. Chem. **2005**, *58*, 86–93.

The illustrated analogues of showdomycin have been prepared and evaluated for their cytotoxic, anti-viral, and anti-bacterial properties.

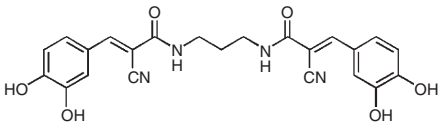


Parallel Solution-Phase Synthesis of Targeted Tyrphostin Libraries with Anticancer Activity

Timothy A. Hill, Jennette A. Sakoff, Phillip J. Robinson, Adam McCluskey

Aust. J. Chem. **2005**, *58*, 94–103.

Reality dictates that cancer will affect everyone in some capacity. Therefore, efforts to develop new therapeutic approaches are constantly ongoing. Here the authors describe a simple semi-automated, parallel solution-phase synthesis of some novel bistyrphostin type molecules (shown here), a number of which are found to be potent growth inhibitors of two cancer-derived cell lines.



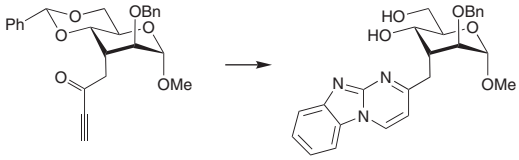
0004-9425/05/02000v

Nucleoside Analogues from Branched-Chain Pyranosides

Iran Otero, Holger Feist, Lidcay Herrera, Manfred Michalik, José Quincoces, Klaus Peseke

Aust. J. Chem. **2005**, *58*, 104–111.

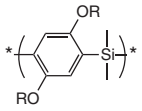
Like *C*-nucleosides, iso-*C*-nucleosides, which are nucleoside analogues in which the nucleobase is linked to the sugar moiety through a carbon atom other than C1, often display numerous biological activities. In this report, the authors describe the synthesis of a new series of iso-*C*-nucleosides that are unusual nucleoside analogues of pyrazoles, pyrimidines, and benzo[4,5]imidazo[1,2-*a*]pyrimidine (shown), and which are attached through a methylene group spacer.



Synthesis and Properties of d–π Conjugated Poly(phenylene silane)s

Xiaobang Duan, Xuanyan Xu, Hongbo Wang, Ping Lu

Aust. J. Chem. **2005**, *58*, 112–114.



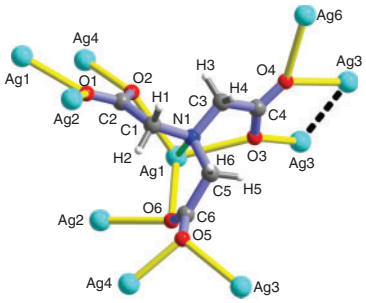
Ia OR = H
Ib OR = OC_2H_5
Ic OR = OC_4H_9
Id OR = OC_6H_{13}

The synthesis and characterization of a series of poly(phenylene silane)s are reported. The d–π conjugation between the phenyl ring and the silicon atom induced a blue shift in the emission maximum (between 346 and 373 nm), which makes these polymers potentially attractive for use in high-performance blue light-emitting materials.

A Three-Dimensional Silver(I) Framework Assembled from Nitrilotriacetate

Chun-Long Chen, Qian Zhang, Ji-Jun Jiang, Qin Wang, Cheng-Yong Su

Aust. J. Chem. **2005**, *58*, 115–118.

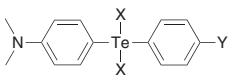


A neutral, three-dimensional silver(I) framework based on a nitrilotriacetate (NTA) ligand has been constructed, in which the NTA exhibits an unusual 13-coordination mode and the silver(I) atoms have various coordination numbers in the range 3–6.

Observation of Te···π and X···X Bonding in *para*-Substituted Diphenyltellurium Dihalides, (p-$Me_2NC_6H_4$)(p-YC_6H_4)TeX_2 (X = Cl, Br, I; Y = H, EtO, Me_2N)

Jens Beckmann, Dainis Dakternieks, Andrew Duthie, Cassandra Mitchell, Markus Schürmann

Aust. J. Chem. **2005**, *58*, 119–127.



1 X = Cl, Y = NMe_2
2 X = Br, Y = NMe_2
3 X = I, Y = NMe_2
4 X = Cl, Y = H
5 X = Cl, Y = OEt

The dihalides were investigated for their supramolecular associations (secondary Te···X/X···X interactions) using X-ray crystallography. (p-$Me_2NC_6H_4)_2TeX_2$ (X = Cl, Br, I) displayed X···X interactions only, (p-$Me_2NC_6H_4$)$PhTeCl_2$ displayed only one Te···Cl contact, while (p-$Me_2NC_6H_4$)-(p-$EtOC_6H_4$)$TeCl_2$ showed no interactions at all.

Novel Disulfides with Antitumour Efficacy and Specificity

Rebecca Griffiths, W. Wei-Lynn Wong, Stephen P. Fletcher, Linda Z. Penn, Richard F. Langler

Aust. J. Chem. **2005**, *58*, 128–136.

$CH_3SO_2CH_2CH_2CH_2CH_2CH_3$

$PhSSCH_2OC(O)CH_2CH_3$

p-$O_2N(C_6H_4)SSCH_3$

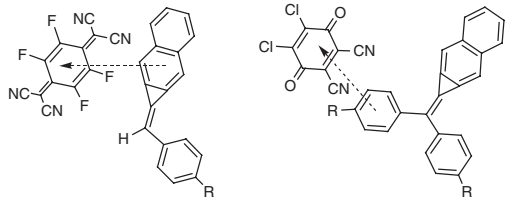
A desirable cell-death pathway to target with anticancer agents is apoptosis as this does not induce an inflammatory response or result in damage to the surrounding tissue. Although current anticancer agents tend to induce apoptosis in both malignant and healthy non-transformed cells, the authors here identified a number of new organosulfur compounds that were found to trigger apoptosis specifically in the former.

Studies in the Cyclopropparene Series. The Formation of Charge-Transfer Complexes from 1-Aryl- and 1-Diarylmethylidene-1*H*-cyclopropa-[*b*]naphthalenes

Brian Halton, Jarrod M. Ward

Aust. J. Chem. **2005**, *58*, 137–142.

The formation of charge-transfer complexes from methylidenecyclopropparenes depends on the C8 double-bond substituents. Several 1-aryl derivatives easily form complexes, whereas the *p*-Me_2N substituent is needed for complex formation in the diaryl series.

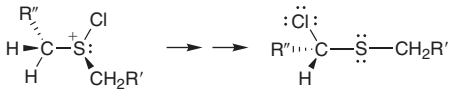


The Role of Ylides in the Chlorination of Unsymmetrical Sulfides: An Ab Initio Molecular Orbital Study

Michael Potvin, Belquis Mothana, Laura Albrecht, Katherine Valenta Darvesh, Richard F. Langler

Aust. J. Chem. **2005**, *58*, 143–148.

Experimentally observed regiochemical outcomes of sulfide chlorination (shown) are not compatible with those of other Pummerer rearrangements. Mechanisms involving ylides have been previously proposed. This theoretical study shows that, for the majority of these reactions, the ylide hypothesis is inapplication excepting the cases when powerful anion stabilizing groups (R′, R″ = CN, CO_2CH_3) are present.



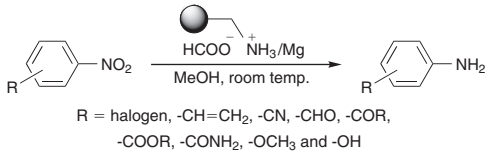
Short Communication

Simple and Efficient Reduction of Aromatic Nitro Compounds Using Recyclable Polymer-Supported Formate and Magnesium

Keelara Abiraj, Gejjalagere R. Srinivasa, D. Channe Gowda

Aust. J. Chem. **2005**, *58*, 149–151.

A facile protocol for the clean and efficient reduction of aromatic nitro compounds to the corresponding amines using polymer-supported formate as a hydrogen donor in the presence of magnesium is described. The polymer-supported hydrogen donor is recyclable, and yields of the amines are as high as 90–97%, making this a very attractive process.



Book Review

Rod Rickards p. 152