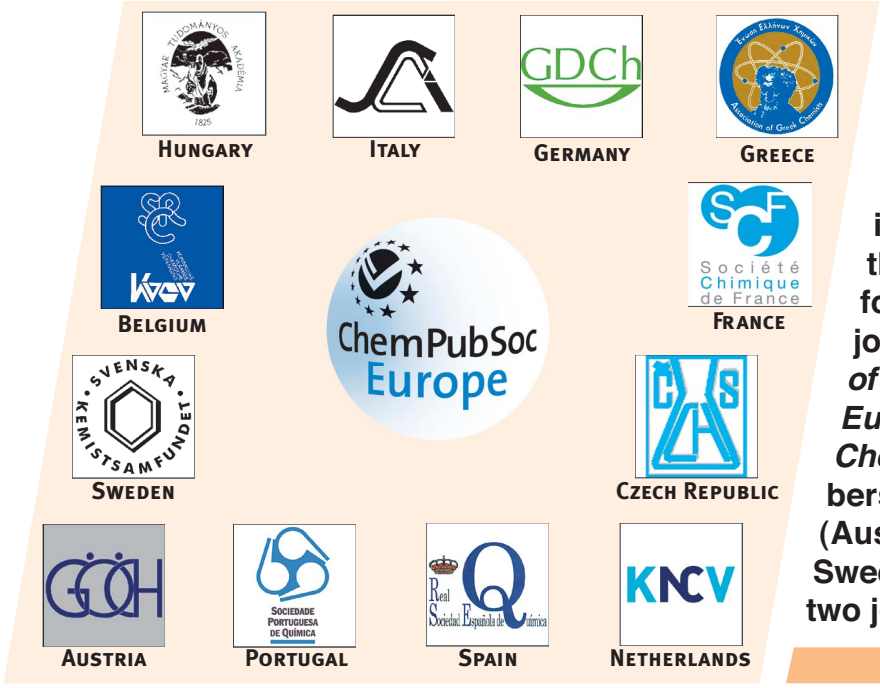
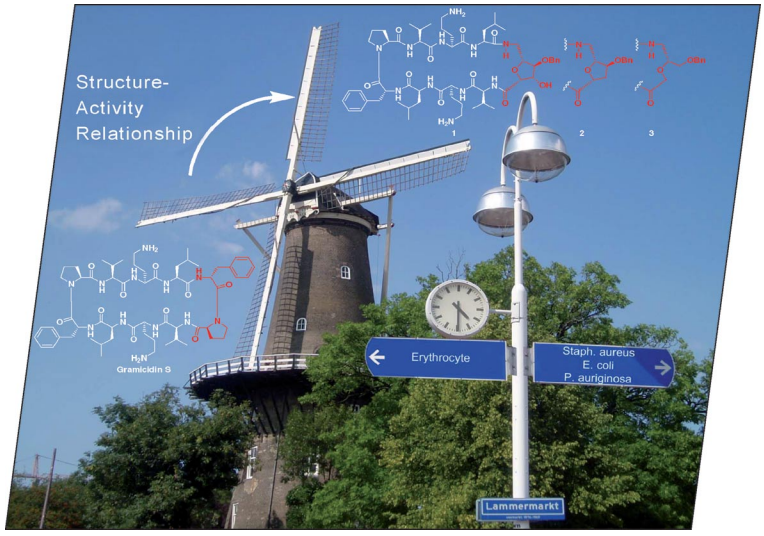


A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows the cationic antimicrobial peptide Gramicidin S (GS, left structure), which disrupts the bacterial membrane, however with little selectivity over the erythrocytic membrane. This mode of action is explained by the amphiphilic β-sheet structure of GS. Three new analogues of GS were designed in which one ^{D}Phe-Pro β-turn motif has been replaced by different sugar amino acids (**1**,**2** and **3** in the right structures). The solution structures of these new analogues were assessed by 1D and 2D NMR spectroscopy, which shows a slightly altered backbone conformation. The antibacterial and hemolytic activities of all analogues were also determined in this study. Details are discussed in the article by M. Overhand et al. on p. 4231ff.

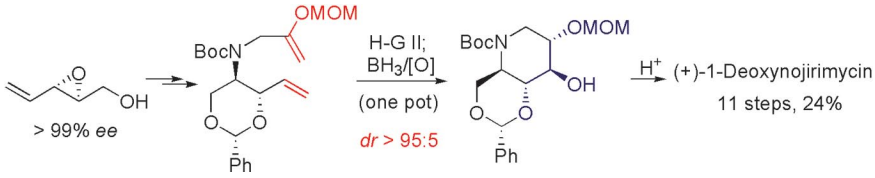


CONTENTS

MICROREVIEW

SHORT COMMUNICATIONS

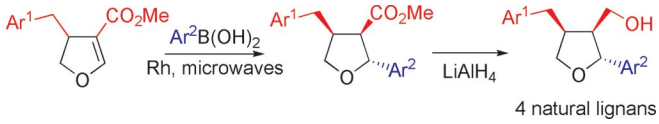
Asymmetric Azasugar Synthesis



The asymmetric synthesis of (+)-1-deoxynojirimycin has been accomplished by using a one-pot enol ether metathesis/hydroboration/oxidation sequence – an efficient approach for the selective formation of the all-*trans* cyclic triol.

Keywords: Total synthesis / Synthetic methods / Metathesis / Natural products / Azasugars

Synthesis of Natural Lignans



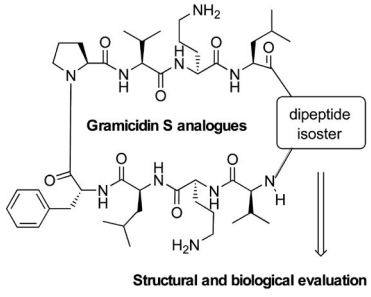
An efficient and stereoselective synthesis of natural lignans with three contiguous stereocenters, using a rhodium-catalyzed, microwave-assisted conjugate addition was developed.

Keywords: Lignans / Rhodium / Conjugate addition / Boronic acids / Microwave chemistry

FULL PAPERS

β-Turn Mimetics

Sugar amino acids are used as dipeptide isosters in cationic antimicrobial peptides. The solution structure of these derivatives is assessed by NMR analysis and the activity against several bacterial strains as well as human erythrocytes is described.



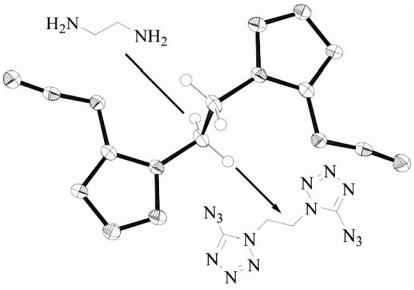
Keywords: Antibiotics / Peptidomimetics / Sugar amino acid / Conformation analysis

CONTENTS

Nitrogen-Rich Compounds

Alkyl-Bridged Bis-5-azidotetrazoles: A Safe Way of Preparation

Keywords: Azides / Nitrogen heterocycles / Synthetic methods

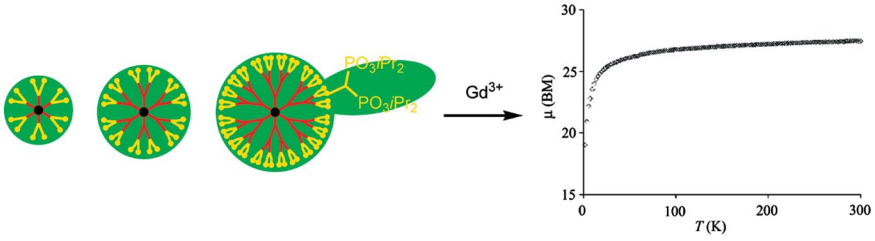


The general, high-yielding synthesis of highly dangerous alkylated bis-5-azidotetrazoles is presented. The synthesis is suitable for a safe, large-scale preparation of bis-5-azidotetrazoles. The crystal structure of 1,2-bis(5-azido-1*H*-tetrazol-1-yl)-ethane was determined by single-crystal X-ray diffraction.

gem-Bisphosphonate Dendrimers

gem-Bisphosphonate-Ended Group Dendrimers: Design and Gadolinium Complexing Properties

Keywords: Dendrimers / Gadolinium / Magnetic properties / Michael addition / Bisphosphonate

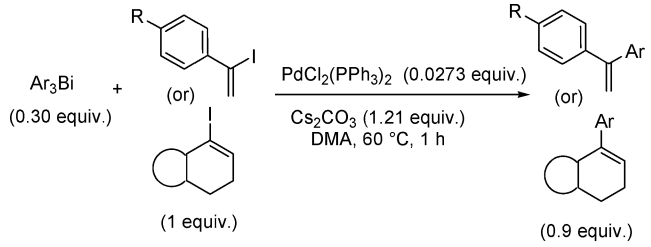


An efficient multistep synthesis of phosphorus dendrimers of different generations capped with *gem*-bisphosphonate groups is reported. Their ability to complex Gd ions is demonstrated.

Vinylic Arylations

Atom-Efficient Vinylic Arylations with Triarylbismuths as Substoichiometric Multicoupling Reagents under Palladium Catalysis

Keywords: Arylation / Bismuth / Palladium / Atom efficiency / Cross-coupling

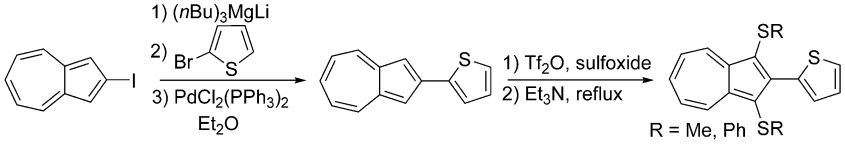


The arylation of vinylic iodides with triarylbismuths was reported under palladium catalysis. Couplings of α-iodoalkenes, 4-iodo-1,2-dihydronaphthalene, and cycloalkenyl iodides with various electronically divergent triarylbismuths were found to be efficient. In these reactions, substoichiometric amounts of triarylbismuths were utilized as multicoupling reagents.

Azulene Chemistry

Synthesis and Redox Behavior of 1,3-Bis(methylthio-) and 1,3-Bis(phenylthio)azulenes Bearing 2- and 3-Thienyl Substituents by Palladium-Catalyzed Cross-Coupling Reaction of 2- and 6-Haloazulenes with Thienylmagnesium Ate Complexes

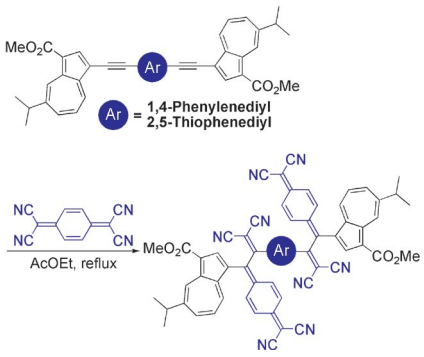
Keywords: Arenes / Cross-coupling / Electrophilic substitution / Cyclic voltammetry



Thienylazulenes **3**–**6** were prepared from the corresponding haloazulenes and thienylmagnesium ate complexes, which were prepared from the corresponding bromothiophenes in the presence of palladium. The reaction of **3**–**6** with sulfoxides in the presence of Tf_2O, followed by treatment with Et_3N afforded the corresponding 1,3-bis(methylthio)- and 1,3-bis(phenylthio)-thienylazulenes in good yields.

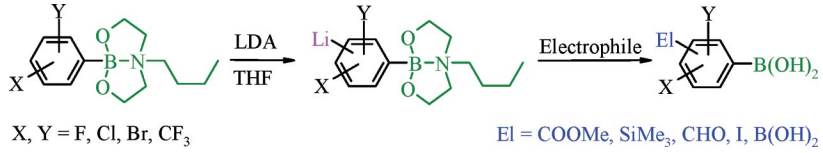
CONTENTS

Azulene Chemistry



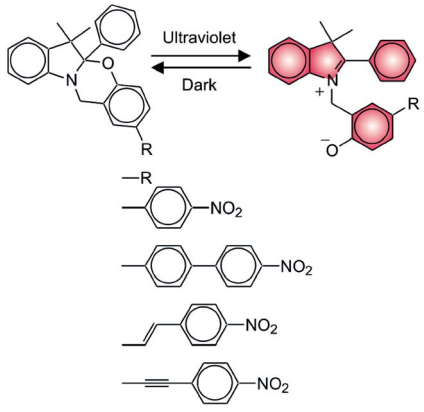
[2+2] cycloaddition/cycloreversion reactions between TCNQ and mono- or bis[2-(azulen-1-yl)ethynyl]benzene or -thiophene derivatives were examined: the corresponding TCNQ adducts, novel azulene-substituted redox-active chromophores, were produced in excellent yields. TCNE/TCNQ double adducts were also prepared both by stepwise and by one-pot cascade reactions.

Lithiation of Arylboronic Esters



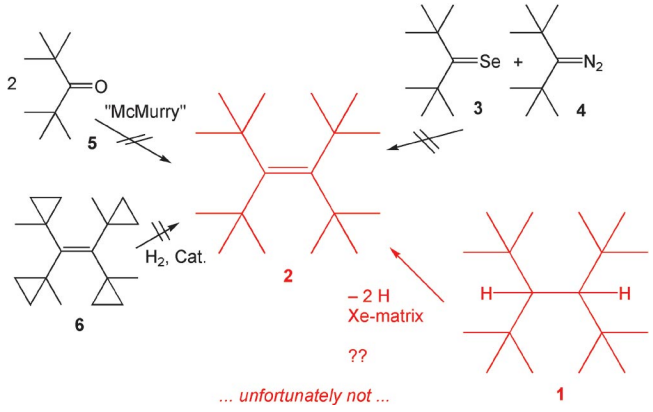
Protected halogenated arylboronic acids were subjected to deprotonation with lithium amide bases to form bimetallic boron-lithium intermediates, which were subsequently treated with electrophiles to give functionalized arylboronic acids.

Fast Photochromic Switches



The ultraviolet irradiation of photochromic 1,3-oxazines results in the formation of zwitterionic isomers after the cleavage of a C–O bond. The photogenerated species incorporate a phenolate chromophore able to absorb in the visible region of the electromagnetic spectrum and revert spontaneously to the original species on a nanosecond timescale.

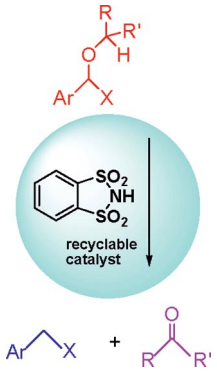
Strained Molecules



Tetra-*tert*-butylethane (**1**) can be pyrolysed in a xenon matrix at $T = 10$ K if the matrix is excited by a 248 nm excimer laser. This reaction failed to yield the long-sought-after alkene **2**. Whereas the recent M05-2X method describes **1** well, the popular B3LYP and MP2 methods do not reproduce the experimental thermochemical data available for **1**.

Disproportionation of Protonated Ethers

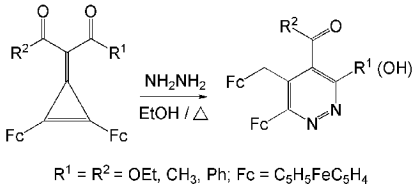
The disproportionation reactions of various dialkyl diarylmethyl ethers, catalyzed by *o*-benzenedisulfonimide, are described. The theoretical study confirmed that the reaction proceeds in two steps: The formation of a carbocation from the protonated ether followed by hydride transfer.



Keywords: Homogeneous catalysis / Ethers / Density functional calculations / Disproportionation / Reaction mechanisms

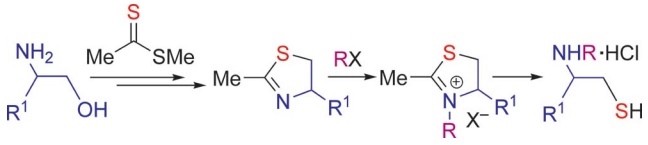
Functional Ferrocenylpyridazines

3-[Acyl(ethoxycarbonyl)]methylidene-, 3-diethoxycarbonylmethylidene-, and 3-diacylmethylidene-1,2-diferrocenylcyclopropenes demonstrated high activity towards reaction with hydrazine at 80–85 °C, giving 3,4,5,6-tetrasubstituted 5-acyl- or (5-ethoxycarbonyl)ferrocenylpyridazines in 65–70% yield.



Keywords: Metallocenes / Cations / Nitrogen heterocycles / Structure elucidation

Amino Thiols and Their Disulfides



Various secondary β-amino thiols and/or their disulfides have been prepared starting from commercially available primary or secondary β-amino alcohols and methyl dithioacetate via thiazolinium salts and thiazolidine intermediates.

Keywords: Amino Thiols / Heterocycles / Sulfur / Alkylation / Amino alcohols

* Author to whom correspondence should be addressed.

Supporting information on the WWW (see article for access details).

If not otherwise indicated in the article, papers in issue 24 were published online on August 4, 2009

