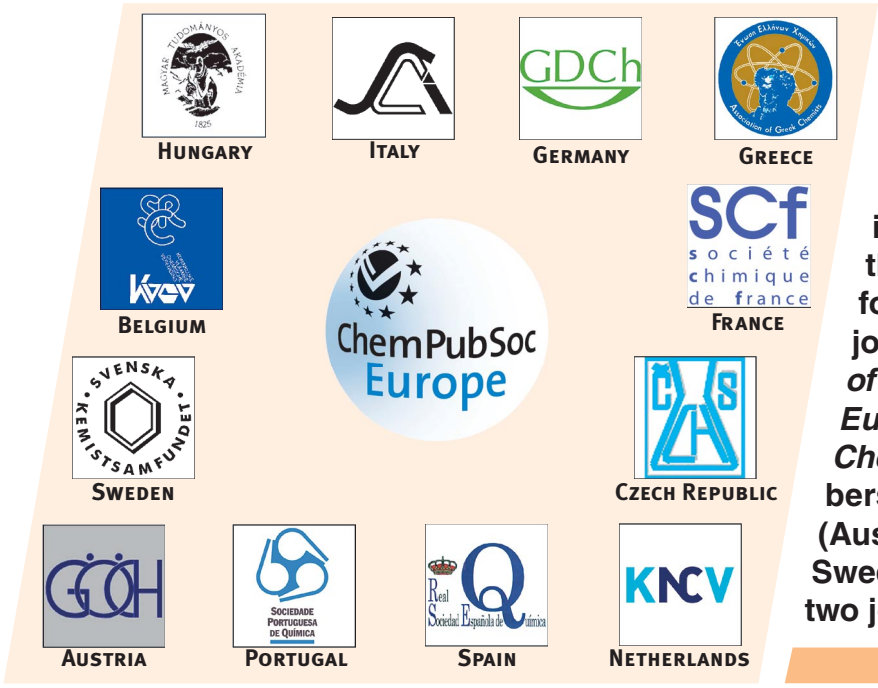
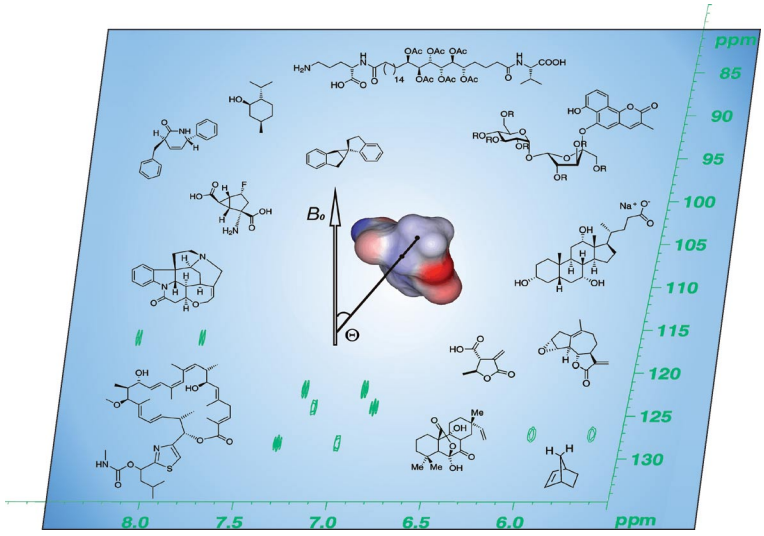


A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further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

COVER PICTURE

The cover picture shows all organic compounds to which residual dipolar couplings (RDCs) were applied in the NMR spectroscopic determination of their relative configuration or in the assignment of diastereotopic moieties. The details on how RDCs can be applied for structure determination, as well as the necessary prerequisites and the current developments in the area of flexible compounds, are presented in the Microreview by C. Thiele on p. 5673ff.



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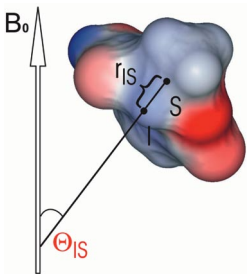
MICROREVIEW

NMR Spectroscopy

Keywords: NMR spectroscopy / Configuration determination / Conformation analysis / Residual dipolar couplings

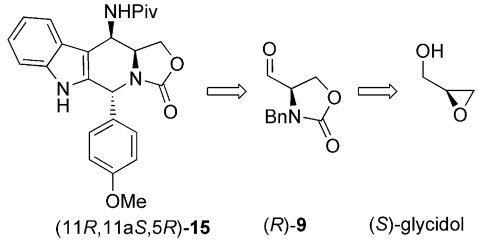


Residual dipolar couplings (RDCs), which become observable after the compound in question is introduced into an anisotropic environment, are increasingly important as additional NMR restraints in the determination of the structure of organic compounds. An overview of the alignment media for organic compounds and the corresponding measurement methods and applications is given.

SHORT COMMUNICATIONS

Stereoselective Synthesis

Keywords: Stereoselective synthesis / α-Amino aldehydes / Bioactive heterolignans / Azaelliptitoxin / Pictet–Spengler reaction

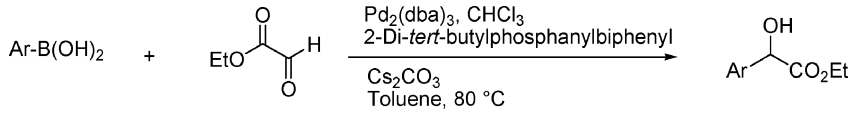


(11*R*,11a*S*,5*R*)-**15** (*R*)-**9** (*S*)-glycidol

The stereoselective synthesis of the *N*-protected 11-amino-azaelliptitoxin analog (11*R*,11a*S*,5*R*)-**15** from (*S*)-glycidol (**7**) is described. The key intermediate of this original synthetic approach is the first prepared enantiopure α-amino aldehyde **9** (≥ 99% *ee*), inducing the expected configurations of the two other stereogenic centers C-5 and C-11 of the final target **15**.

Mandelate Derivatives

Keywords: C–C coupling / Boronic acids / Boron / Glyoxylates / Palladium



The palladium-catalyzed coupling of arylboronic acids with ethyl glyoxylate provides a straightforward method for the synthesis of mandelic esters. $Pd_2(dba)_3{\cdot}CHCl_3$ in combination with 2-di-*tert*-butylphosphanylbiphenyl as the catalytic system and Cs_2CO_3 as the base were used. The reaction tolerates a wide range of functionalized boronic acids.

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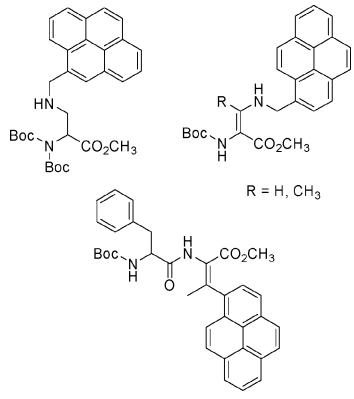
FULL PAPERS

Pyrenylamino Acids

β-Pyrenylamino acid derivatives have been synthesized from dehydroamino acids by using several types of reactions, namely, Michael addition, substitution and Suzuki cross-coupling reactions. The latter type of reaction was also applied to the synthesis of β-(pyren-1-yl)dehydrodipeptides. The electrochemical behaviour and photophysical properties of some of the compounds were studied.



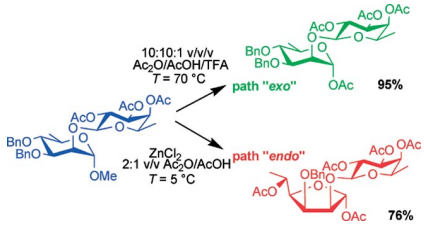
A. S. Abreu, E. M. S. Castanheira, P. M. T. Ferreira,* L. S. Monteiro, G. Pereira, M.-J. R. P. Queiroz 5697–5703

Pyrenylamino Acids: Synthesis, Photophysical and Electrochemical Studies

Keywords: Dehydroamino acids / Pyrene / Cross-coupling / Cyclic voltammetry / Fluorescence

Acetolysis of 6-Deoxysugars

The mild and selective acetolysis of 6-deoxysugar (rhamnose, fucose, and quinovose) derivatives under thermodynamic and kinetic conditions has been investigated. The products obtained are highly dependent on the competition between *exo* and *endo* anomeric oxygen by the Ac^+ ion.



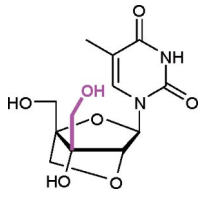
L. Cirillo, E. Bedini,* M. Parrilli 5704–5714

Acetolysis of 6-Deoxysugar Disaccharide Building Blocks: *exo* versus *endo* Activation

Keywords: Acetolysis / Deoxysugars / Oligosaccharides / Hexofuranoses / Zinc

Nucleic Acid Chemistry

The 3′-*C*-hydroxymethyl-branched Locked Nucleic Acid (LNA) monomer was synthesized in 19 synthetic steps from diacetone-α-D-glucose. The nucleoside is locked in an *N*-type conformation with the hydroxymethyl substituent in a pseudoaxial position.



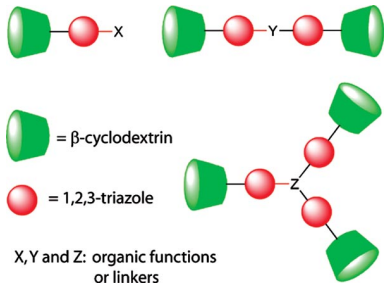
S. Kumar, P. K. Sharma, P. C. Stein, P. Nielsen* 5715–5722

Synthesis of the 3′-*C*-Hydroxymethyl-Branched Locked Nucleic Acid Thymidine Monomer

Keywords: Locked nucleic acid / Nucleosides / Oligonucleotides / Ruthenium oxidation

β-Cyclodextrin Hosts

A variety of mono- and polytopic 1,2,3-triazole β-CD derivatives have been synthesized by click chemistry. The synthetic procedure is based on the Cu^I-catalyzed azide–alkyne cycloaddition reaction between hydroxylated or randomly methylated β-CD monoazides and alkynyl precursors. Easy to use, the reaction is also high-yielding for many molecules.



M. Mourer, F. Hapiot, S. Tilloy, E. Monflier, S. Menuel* 5723–5730

Easily Accessible Mono- and Polytopic β-Cyclodextrin Hosts by Click Chemistry

Keywords: Click chemistry / Cycloaddition / Cyclodextrins

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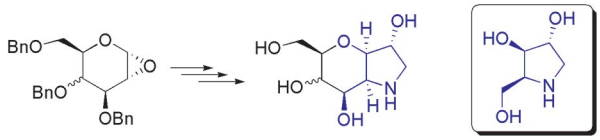
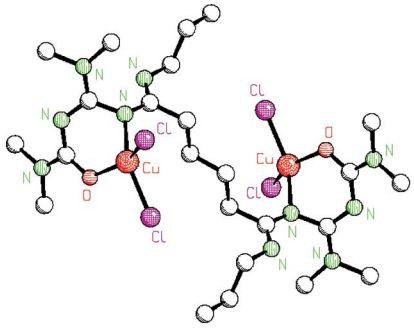
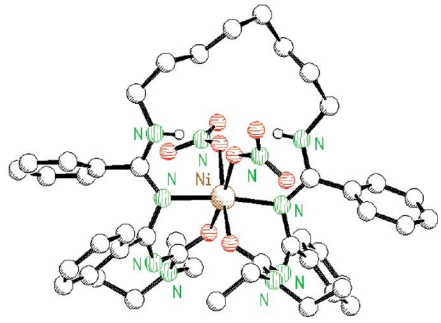
Iminosugar Hybrid Molecules



3,4,6-Tri-*O*-benzyl glycal epoxides have been efficiently converted into four sugar–iminosugar hybrid molecules made up of D-glucose and D-galactose with pyrrolidine-based iminosugars. These hybrid molecules were found to be moderate glycosidase inhibitors.

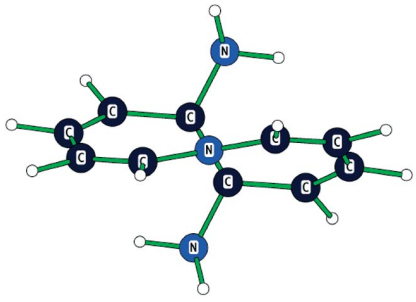
1-Oxa-3,5,7-triazaheptatrienes





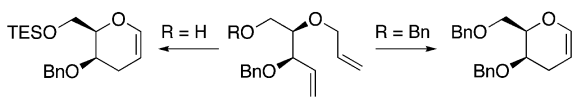
Multivalent amino-substituted bis- and tris-(armed) oligonitrile derivatives are synthesized by two alternative reaction pathways. In the solid state some derivatives show inter- and intramolecular hydrogen bonding. They act as chelating ligands with various metal ions to form novel types of coordination compounds.

Möbius Aromaticity



Computational evidence at the B3LYP/6-31G* level of theory suggests that the 6,7-diamino-substituted helical "Möbius" 1H-aza[11]annulene is aromatic and a neutral ground state on its potential surface.

3-Deoxy Glycals



Tandem RCM/hydrosilylation/ isomerization

Tandem RCM/isomerization

3-Deoxygalactal was synthesized by using the tandem RCM/isomerization method. The tandem sequence can also be extended by a dehydrogenative silylation step, resulting in the formation of a 3-deoxy glycal bearing two orthogonally protected alcohol groups.

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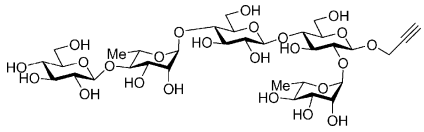
Synthetic Carbohydrate

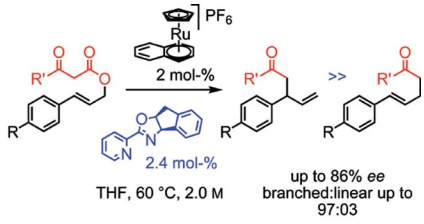
The total synthesis of the carbohydrate portion of steroidal saponins, isolated from *Calamus insignis*, is reported. A simple route was followed, starting from commercially available D-glucose and L-rhamnose, through high-yielding protecting group manipulation strategies.



Keywords: Carbohydrates / Oligosaccharides / Glycosides / Saponins

Homogeneous Catalysis

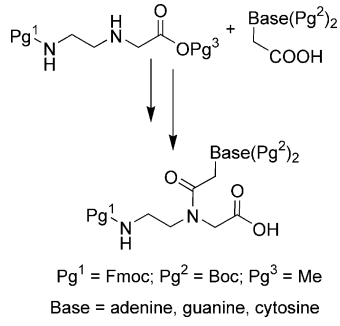
A combination of [CpRu(η^6-naphthalene)][PF_6] and enantiopure pyridine-mono-oxazoline ligands catalyze the regio- and enantioselective decarboxylative Carroll rearrangement of allyl β-keto esters into γ,δ-unsaturated ketones.



Keywords: Allylic compounds / Air-stable precatalyst / C–C coupling / N ligands / Ruthenium / Enantioselective catalysis

PNA Synthesis

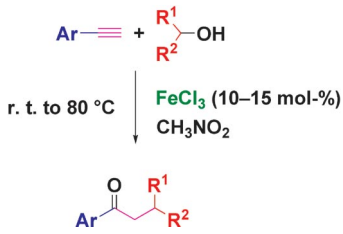
A straightforward synthesis of orthogonally protected PNA monomers is described. The new monomers are demonstrated to be valid building blocks for PNA oligomerization.



Keywords: Peptide nucleic acids / Guanine / Protecting groups / Solid-phase synthesis

Addition of Alcohols to Alkynes

A novel, efficient and atom-economical reaction for the preparation of diversely substituted aryl ketones by the simple treatment of terminal aryl alkynes and benzylic alcohols with catalytic $FeCl_3$ has been developed. The reaction is highly solvent dependent; nitromethane was the best solvent for this transformation. The mechanism of this reaction is proposed and discussed.



Keywords: Alkynes / Alcohols / Ferric chloride / Addition reaction / Atom economy

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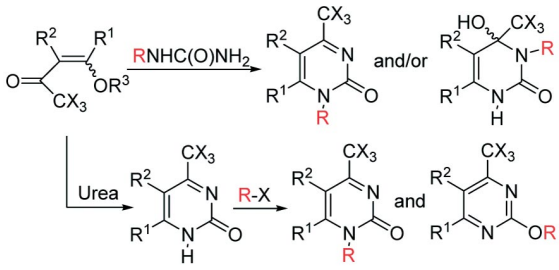
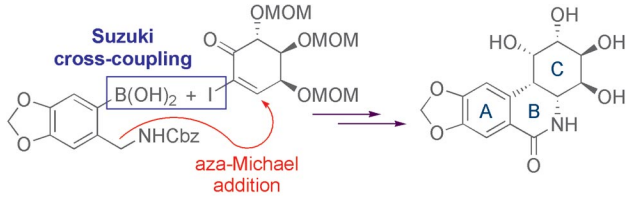
N-Alkylation of Pyrimidin-2-ones



The chemoselective control of the synthesis of *N*-alkyl-4-(trihalomethyl)-1*H*-pyrimidin-2-ones is reported.

Keywords: Pyrimidines / Heterocycles / Alkylation / Enones / Chemoselectivity

Phenanthridone Synthesis



A convergent synthesis of a highly oxygenated phenanthridone, featuring a Suzuki cross-coupling and intramolecular aza-Michael addition reaction sequence to generate the fused B–C ring juncture, is accomplished.

Keywords: Antitumor agents / Chiral pool / Cross-coupling / Intramolecular aza-Michael addition / Pancratistatin

* 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 33 were published online on November 4, 2008

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