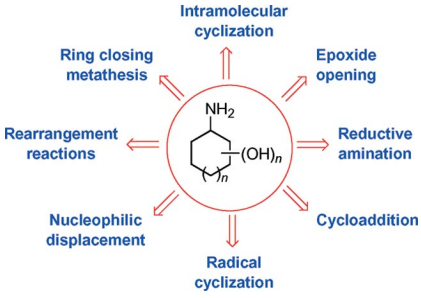
CONTENTS

MICROREVIEW

Aminocyclitols

Keywords: Aminocyclitols / Cyclitols / Natural products / Synthetic methodology / Stereocontrol / Disatereoselectivity / Functional group interconversion

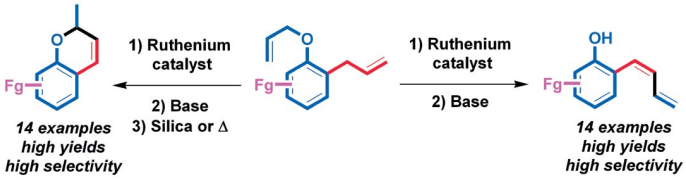


An update of the most relevant literature methods for the synthesis of aminocyclitols is presented. The material is organized according to the methodologies used for the construction of the aminocyclitol framework.

SHORT COMMUNICATIONS

Multi-Catalysis Reactions

Keywords: Heterocycles / Phenols / Multicatalysis reactions / Ring closing metathesis



A novel and practical one-pot multi-catalysis process for the synthesis of highly substituted benzo[*b*]oxepines **5**, (*Z*)-2-(buta-1,3-dienyl)phenols **6** and 2-methyl-2*H*-chromenes **7** from simple starting materials is described. (*Z*)-2-(Buta-1,3-dienyl)phenols **6** are obtained via base-induced ring opening of highly functionalized benzo[*b*]-oxepines **5**.

Organic White Pigments

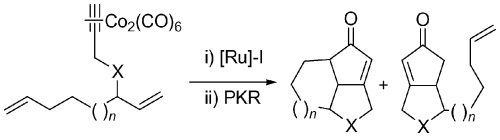
Keywords: Pigments / Naphthalene / Heterocycles / Aromatic compounds / Sun protection

(Hydroxyalkyl)naphthalene-tetracarboxdiimides – white pigment powders with strong opacifying properties – were prepared in three steps. Applications are discussed.

 © 2008 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

FULL PAPERS

RCM/Pauson–Khand Reactions



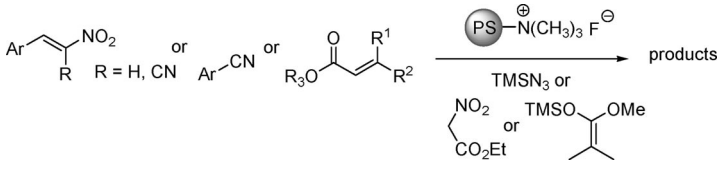
The combination of RCM followed by an intramolecular Pauson–Khand reaction gives direct entry to tricyclic compounds. The procedure has been studied for dienynes containing heteroatoms and allows the building of [6,5,5] and [7,5,5] tricyclic systems. The feasibility of the process depends strongly on the nature of the substrate.

M. Rosillo, E. Arnáiz, D. Abdi, J. Blanco-Urgoiti, G. Domínguez, J. Pérez-Castells* 3917–3927

Combination of RCM and the Pauson–Khand Reaction: One-Step Synthesis of Tricyclic Structures

Keywords: Pauson–Khand reaction / Metathesis / Cyclization / One-pot reaction / Tricyclic compounds

Solid Catalysts



Amberlite IRA900F (Amb-F) is an efficient metal-free catalyst for activation of Si–N and Si–O bonds and a mild base in a variety of organic transformations under solvent-free conditions.

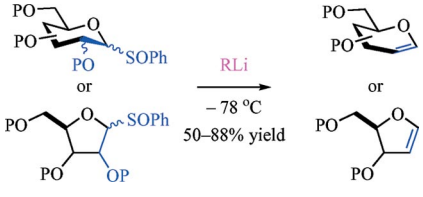
F. Fringuelli,* D. Lanari, F. Pizzo, L. Vaccaro* 3928–3932

Amberlite IRA900F as a Solid Fluoride Source for a Variety of Organic Transformations under Solvent-Free Conditions

Keywords: Supported catalysts / Green chemistry / Nitro compounds

Glycals from Sulfoxides

Pyranoid and furanoid glycals can be conveniently prepared from glycosyl sulfoxides by treatment with organolithium reagents at low temperature.



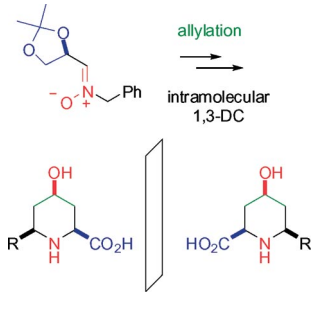
A. M. Gómez,* M. Casillas, A. Barrio, A. Gawel, J. C. López* 3933–3942

Synthesis of Pyranoid and Furanoid Glycals from Glycosyl Sulfoxides by Treatment with Organolithium Reagents

Keywords: Glycosyl sulfoxides / Organolithium reagents / Pyranoid glycals / Furanoid glycals / Sulfoxide ligand exchange

Nitrone Chemistry

By using a D-glyceraldehyde-derived nitrone as the only chiral source the enantiodivergent synthesis of all-*cis* 6-substituted 4-hydroxypipecolic acid derivatives has been achieved by sequential allylation and intramolecular cycloaddition of nitrones. The cycloaddition takes place by a hitherto unknown 2-aza-Cope rearrangement, as demonstrated by the observed cycloadducts.



P. Merino,* V. Mannucci, T. Tejero 3943–3959

Exploring Nitrone Chemistry: Towards the Enantiodivergent Synthesis of 6-Substituted 4-Hydroxypipecolic Acid Derivatives

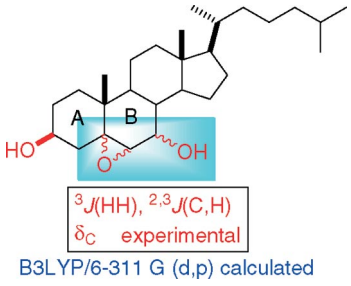
Keywords: Pipecolic acids / Piperidines / Nitrones / Nucleophilic Addition / Cycloaddition / Cope rearrangement / Allylation

 © 2008 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

CONTENTS

J-Based Analysis and DFT−NMR

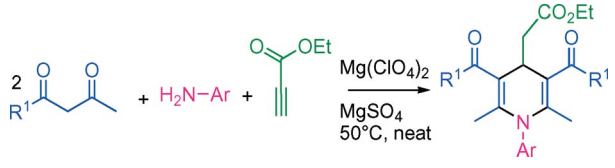
Keywords: Steroids / NMR spectroscopy / Density functional calculations / *J*-Based analysis



An exhaustive QM-*J*-based analysis has been used to replicate the experimental H−H and C−H coupling constants and ^{13}C NMR chemical shifts. Also, the B3LYP GIAO methodology with the 6-311-G(d,p) basis set shows that data obtained from rings A and B are sufficient to calculate the correct stereochemistry of the 5,6-epoxy and 7-hydroxy groups.

1,4-Dihydropyridine Synthesis

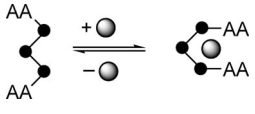
Keywords: Multicomponent reactions / Magnesium perchlorate / Nitrogen heterocycles / Solvent-free conditions / Atropisomers



Substituted 1,4-dihydropyridines are easily obtained by a multicomponent one-pot and solvent-free condensation between aromatic amines, β-keto derivatives and ethyl propiolate mediated by $Mg(ClO_4)_2$. Conformational isomers generated from the use of *ortho*- or *meta*-substituted arylamines have been submitted to an NMR study to calculate the energy barriers involved in their interconversion.

Reversible Folding Inducers

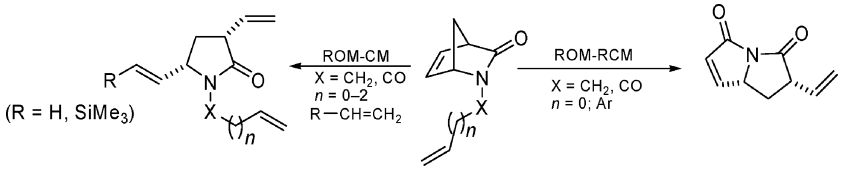
Keywords: Conformational analysis / Terpyridines / Folding / Amino acids / Peptides



Fold and unfold: A terpyridine scaffold has been developed as a reversible inducer of folding of amino acids or dipeptide sequences by metal complexation/decomplexation or by protonation/deprotonation.

Metathesis Reactions

Keywords: Metathesis / Pyrrolidinone / Pyrrolizidinone / Hoveyda−Grubbs catalyst / Aza compounds / Bicyclic compounds

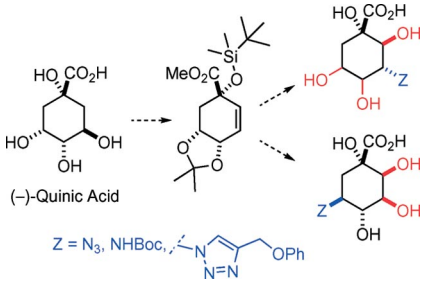


The chemoselectivity of the metathesis reactions of *N*-substituted 3-oxo-2-azanorbornene derivatives may be tuned by using the second-generation Hoveyda−Grubbs catalyst.

 © 2008 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

Cyclic γ-Amino Acids

The synthesis of polyhydroxylated γ-azido and γ-amino acids from (−)-quinic acid is described. The reactivity of highly functionalized azides **2** and **4a** with alkynes by click chemistry has been explored and is demonstrated in the cases of triazoles **5** and **6**.

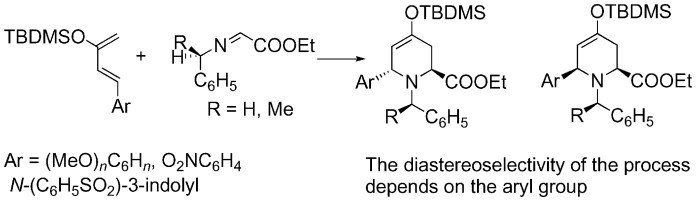


V. F. V. Prazeres, L. Castedo, C. González-Bello* ..... 3991−4003

Stereoselective Synthesis of Novel Cyclic γ-Amino Acids and Triazole Derivatives

Keywords: Cyclic γ-amino acids / Regioselectivity / Click chemistry / (−)-Quinic acid

Imino Cycloaddition



New 6-aryl-4-oxopipecolic acid derivatives have been prepared by imino-Diels−Alder reactions. The effect on the reactivity and diastereoselectivity produced by the aromatic ring has been studied. Solid-supported imines yielded the *N*-deprotected cycloadducts by direct cleavage from the resin with no diastereoselectivity.

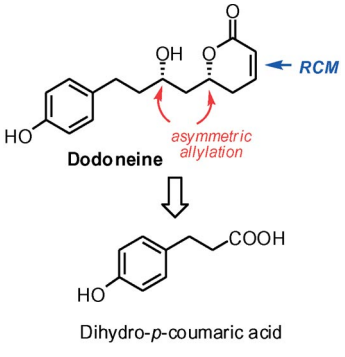
E. Caballero,* J. Figueroa, P. Puebla, R. Peláez, F. Tomé, M. Medarde ..... 4004−4014

Imino-Diels−Alder Reactions of 1-Aryl-3-(trialkylsiloxy)-1,3-butadienes in Solution and the Solid Phase

Keywords: 1-Aryl-3-siloxy-1,3-butadienes / Pipecolic acid / Diastereoselectivity / Solid-phase synthesis / Diels−Alder reactions

Natural Product Synthesis

The first total synthesis of the naturally occurring dihydropyranone dodoneine is reported. Asymmetric allylation reactions were used for the stereoselective generation of the two stereogenic centers. The pyranone ring was created by ring-closing metathesis.

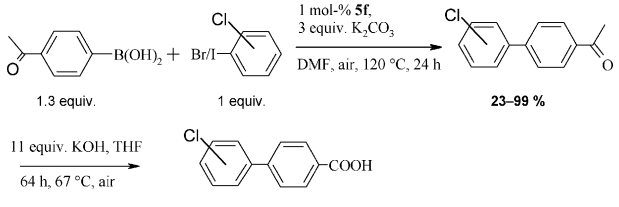


P. Álvarez-Bercedo, E. Falomir,* J. Murga, M. Carda, J. A. Marco* ..... 4015−4018

Stereoselective Synthesis of the Naturally Occurring 2-Pyranone Dodoneine

Keywords: Dodoneine / Oxygen heterocycles / Dihydropyranones / Allylation / Asymmetric synthesis / Ring-closing metathesis

Suzuki Reaction Promotion



Several novel diimines (Salen-type ligands **2**) and their reduced diamine counterparts **3** form Pd complexes **4** and **5**. Employment of the isolated complexes **4e** and **5f** yield polychlorinated biphenyls (PCBs) according to the Suzuki cross-coupling protocol.

T. Kylmälä, N. Kuuloja, Y. Xu, K. Rissanen, R. Franzén* ..... 4019−4024

Synthesis of Chlorinated Biphenyls by Suzuki Cross-Coupling Using Diamine or Diimine-Palladium Complexes

Keywords: Diimine ligands / Diamine ligands / Palladium complexes / Suzuki cross-coupling / Biaryl compounds / Polychlorinated biphenyls (PCBs) / Biphenylcarboxylic acids (BCAs) / Suzuki reaction

 © 2008 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim

CONTENTS

* Author to whom correspondence should be addressed.

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

 © 2008 Wiley-VCH Verlag GmbH & Co. KGaA, Weinheim