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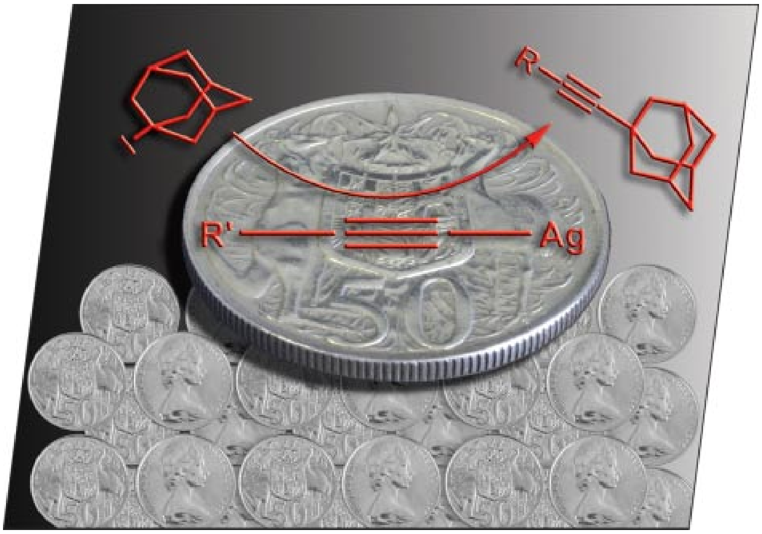
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows a rare, 80% silver, round Australian 50-cent piece, which was introduced in 1966 when Australia changed currency from the Australian pound to the Australian dollar. It was later replaced with a copper/nickel dodecagonal (12-sided) version in 1969. The coin underpins the reaction of a silver(I) acetylide with adamantyl iodide affording the bridgehead-substituted adamantylacetylene. This new methodology has nanotechnological ramifications as discussed in the article by C. M. Williams et al. on p. 241 ff. Brett D. Schwartz is acknowledged for preparing the artwork for the cover picture.



CONTENTS

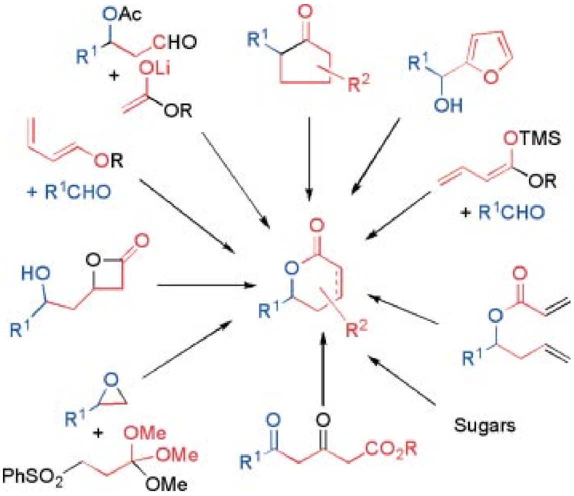
MICROREVIEW

Synthetic Strategies

V. Boucard, G. Broustal,
J. M. Campagne* 225–236

Synthetic Approaches to α,β-Unsaturated δ-Lactones and Lactols

Keywords: Lactones / Natural products / Total synthesis



Six-membered unsaturated δ-lactones are ubiquitous in a number of natural products possessing potent cytotoxic activities. This Microreview is focused on recent advances in the asymmetric synthesis of such compounds.

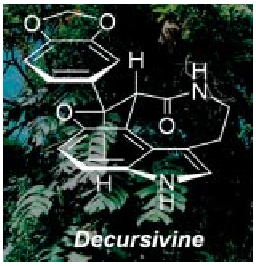
SHORT COMMUNICATION

Natural Product Synthesis

A. B. Leduc, M. A. Kerr* 237–240

Total Synthesis of (±)-Decursivine

Keywords: Decursivine / Diels–Alder / Indole / Total synthesis / Boron aldol



A Diels–Alder/Plieninger indolization protocol sets the stage for elaboration of the resulting indole resulting in the first synthesis of the antimalarial natural product decursivine shown here against its source plant *Rhaphidophora decursiva*.

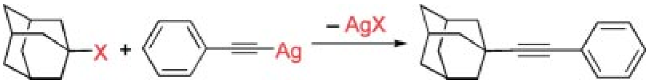
FULL PAPERS

Polishing Silver for Bridgehead Substitution

R. H. Pouwer, J. B. Harper,
K. Vyakaranam, J. Michl, C. M. Williams,*
C. H. Jessen, P. V. Bernhardt 241–248

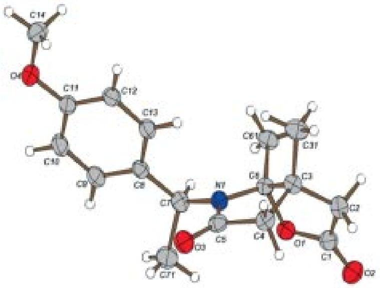
Investigating Direct Alkynylation at the Bridgehead of Bicyclic Cages Using Silver(I) Acetylides

Keywords: Alkynylation / Silver(I) acetylides / Carbon–carbon bond formation / Bridgehead reactions / Bicyclic cages / Adamantanes / Carborate anions



Although silver(I) acetylides have seen little synthetic use to-date, their ability to perform bridgehead substitution on bicyclic cages has been developed. This type of methodology is of considerable importance due to relevant applications in the rapidly emerging field of nanotechnology.

Chiral Hydroporphyrins



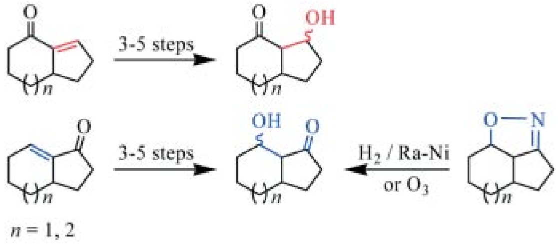
An optically active *N*-alkylated lactam-lactone and its diastereomer were used to prepare entantiomerically pure building blocks for the synthesis of hydroporphyrins.

G. Etornam Adukpo, T. Borrmann, R. Manski, R. I. Sáez Díaz, W.-D. Stohrer, F.-P. Montforts* 249–257

Synthesis of an Enantiomerically Pure Building Block for the Synthesis of Hydroporphyrins

Keywords: Hydroporphyrins / Nitrogen heterocycles / Chiral resolution / Circular dichroism

Hydrindanones and Hydroazulenones



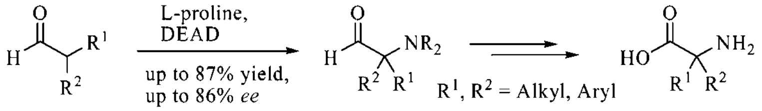
The preparation of β-hydroxyhydrindanones and β-hydroxyhydroazulenones from α,β-enone and isoxazoline precursors is described.

G. G. Tsantali, J. Dimtsas, C. A. Tsoleridis, I. M. Takakis* 258–265

Preparation of Sixteen 3-Hydroxy-4- and 7-Hydroxy-1-hydrindanones and 3-Hydroxy-4- and 8-Hydroxy-1-hydroazulenones

Keywords: Alcohols / Diastereoselectivity / Elimination / Fused-ring systems / Isomerization / Ketones

Asymmetric Amination



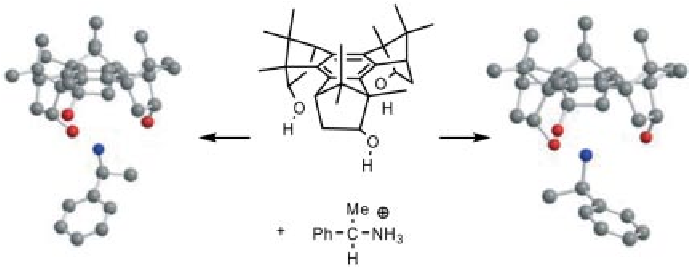
An efficient access to configurationally stable α,α-disubstituted α-amino aldehydes, oxazolidinones, and α-amino acids is presented. Starting from easily available racemic aldehydes, the α-aminated products were obtained using azodicarboxylates as the nitrogen source in up to 86% *ee* and moderate to excellent yield. These products could further be converted into the corresponding α-amino alcohols, oxazolidinones, and into α-alkylated phenylglycines.

T. Baumann, H. Vogt, S. Bräse* 266–282

The Proline-Catalyzed Asymmetric Amination of Branched Aldehydes

Keywords: Amination / Amino acids / Organocatalysis / Aldehydes / Asymmetric synthesis

Chiral Recognition



(+)-*syn*-Benzotriborneol was obtained in eight steps from enantiopure (–)-bornyl acetate. This C_3-symmetric enantiopure tripodal ligand demostrated to act as an efficient chiral solvating agent with (1-phenethyl)ammonium ion, affecting appreciable splitting of ^{1}H and ^{13}C NMR resonances of this chiral ion.

F. Fabris,* L. Pellizzaro, C. Zonta,* O. De Lucchi 283–291

A Novel C_3-Symmetric Triol as Chiral Receptor for Ammonium Ions

Keywords: Chirality / Host-guest systems / Enantioselective recognition / Cyclotrimerization / Tripodal ligand

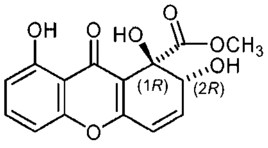
CONTENTS

Absolute Configuration

H. Hussain, K. Krohn,* U. Floerke, B. Schulz, S. Draeger, G. Pescitelli, S. Antus, T. Kurtán .... 292−295

Absolute Configurations of Globosuxanthone A and Secondary Metabolites from *Microdiplodia* sp. − A Novel Solid-State CD/TDDFT Approach

Keywords: Fungal secondary metabolites / *Microdiplodia* sp. / Dihydroxanthenone / Single-crystal X-ray analysis / TDDFT CD calculations / Solid-state CD



Globosuxanthone A

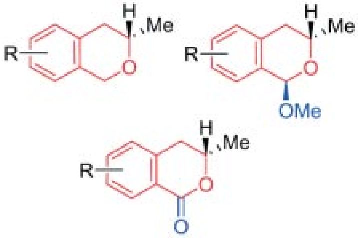
The absolute configuration of the potent new antitumor antibiotic, globosuxanthone A is established by a combination of X-ray structure analysis, quantum-mechanic calculatation of the theoretical CD spectrum from the X-ray coordinates and comparison with the solid-state CD spectrum.

Absolute Configuration

G. Kerti, T. Kurtán,* T.-Z. Illyés, K. E. Kövér, S. Sólyom, G. Pescitelli, N. Fujioka, N. Berova, S. Antus* .... 296−305

Enantioselective Synthesis of 3-Methylisochromans and Determination of Their Absolute Configurations by Circular Dichroism

Keywords: Chirality / Configuration determination / Kinetic resolution



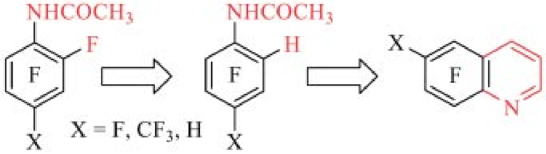
Seven (*S*)-3-methylisochromans with different substitution patterns on their aromatic rings were synthesized from (*S*)-1-arylpropan-2-ol derivatives, and a CD study was performed on the effect of their achiral ring substituents. By oxidation of isochromans, dihydroisocoumarins and 1-methoxy-3-methylisochroman derivatives were also prepared.

Polyfluoroquinolines

S. S. Laev, L. Y. Gurskaya, G. A. Selivanova, I. V. Beregovaya, L. N. Shchegoleva, N. V. Vasil'eva, M. M. Shakirov, V. D. Shteingarts* .... 306−316

N-Acetylation as a Means to Activate Polyfluoroarylamines for Selective *ortho*-Hydrodefluorination by Zinc in Aqueous Ammonia: A Concise Route to Polyfluorobenzo Azaheterocycles

Keywords: Amides / Hydrodefluorination / Ab initio calculations / Nitrogen heterocycles / Zinc



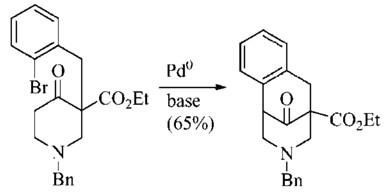
Reduction of *N*-acetyl derivatives of polyfluoroarylamines by zinc in aqueous ammonia and subsequent Skraup heterocyclization of their *ortho*-hydrodefluorinated analogs thus prepared furnish an expeditious approach to quinolines polyfluorinated in the benzene moiety.

Benzomorphan Synthesis

A. S. Khartulyari, M. E. Maier* 317–324

Synthesis of Benzomorphan Analogues by Intramolecular Buchwald–Hartwig Cyclization

A new strategy toward the important class of benzomorphans is described. The key bond formation is based on an intramolecular Buchwald–Hartwig arylation reaction. After removal of the *N*-protecting group from the tricyclic benzomorphan derivatives, derivatization reactions are possible.



Keywords: Cyclization / Benzomorphan / Pd catalysis / Scaffold / Arylation

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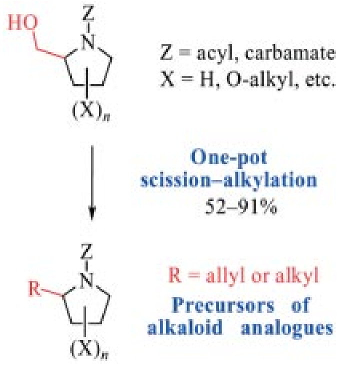
Alkaloids by Radical Fragmentation

A. Boto,* D. Hernández, R. Hernández,* A. Montoya, E. Suárez 325–334

Synthesis of Alkaloid Analogues from β-Amino Alcohols by β-Fragmentation of Primary Alkoxyl Radicals

The fragmentation of primary alkoxyl radicals is usually a minor process with respect to other competing reactions. However, when β-amino alcohols were used as substrates, the scission proceeded in good to excellent yields. The fragmentation can be coupled with an allylation or alkylation reaction, to give alkaloid analogues and functionalized nitrogen heterocycles.



Keywords: Alkaloids / Amino alcohols / Radical reactions / Nitrogen heterocycles / Cleavage reactions

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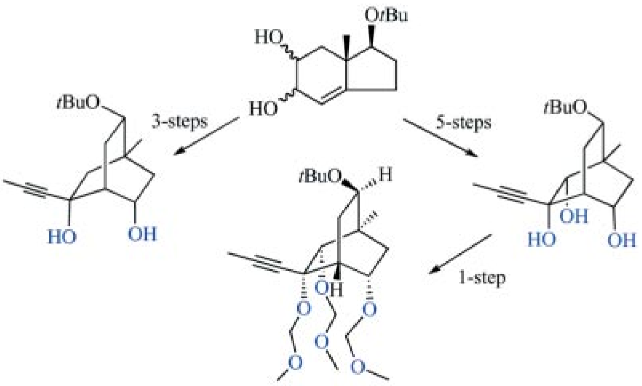
Chiral Ligands for Catalysis

L. Finet, M. Dakir, I. Castellote, T. Kaoudi, L. Toupet, S. Arseniyadis* 335–341

Synthesis of Chiral Ligands from Hydrindene Diols with a Consecutive Heterodomino Transformation as the Key Reaction Step



The threefold different oxygenation pattern of a domino product is used to generate bi-, tri- and polydentate ligands. The inexpensive chirality was derived from (*S*)-(+)-Hajos–Parrish ketone in early steps.

Keywords: Chirality / Ligand design / Domino reactions / Bicyclo[2.2.2]octane

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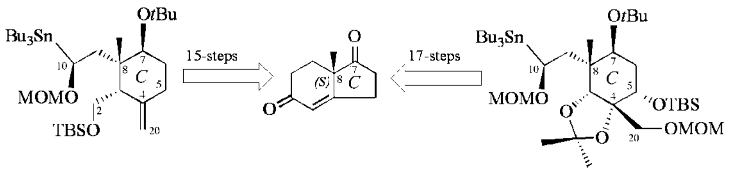
Fully Functional Taxoid C-Ring Construction

L. Finet, M. Dakir, A. Chiaroni, S. Arseniyadis* 342–350

Practical Construction of Taxoid C-Ring Segments with a Consecutive Heterodomino Transformation as the Key Reaction Step



New taxoid C-ring precursors, designed to minimize post-coupling elaboration are synthesized. The key feature of their preparation is a consecutive heterodomino reaction.

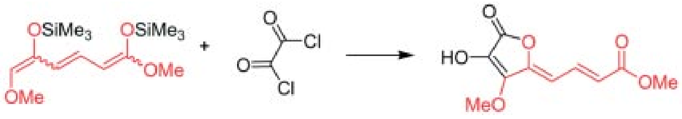
Keywords: Taxoid construction / Domino reactions / Bicyclo[2.2.2]octane / Oxidation

Synthesis of Butenolides

I. Freifeld, G. Bose, T. Eckardt, P. Langer* .... **351−355**

Synthesis of γ-Alkylidenebutenolides by Formal [3+2] Cyclizations of 1,5- and 2,4-Bis(trimethylsilyloxy)-1,3,5-hexatrienes with Oxalyl Chloride

Keywords: Butenolides / Cyclizations / O-Heterocycles / Regioselectivity / Silyl enol ethers



γ-Alkylidenebutenolides were regioselectively prepared by cyclization of 1,5- and 2,4-bis(trimethylsilyloxy)-1,3,5-hexatrienes with oxalyl chloride.

Amino Esters from β-Lactams

L. De Vitis, L. Troisi,* C. Granito, E. Pindinelli, L. Ronzini .... **356−362**

Tandem-Selective Bond Cleavage of the Lactam Nucleus and Michael Reaction

Keywords: Lactams / Amino esters / Cleavage reactions / Michael addition

Ar = phenyl; 4-methylthiazol-2-yl; Ar' = phenyl; thiazol-2-yl; 2-phenylethyl

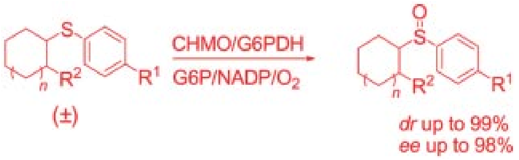
Ring opening reactions were performed on 3-allyl-β-lactams with CH_3O^-/CH_3OH at room temperature and/or reflux. The lactam nucleus isomerization followed by the N1−C2 bond cleavage and the methanol Michael addition affords substituted amino esters. The ring opening path is highlighted depending on the substituent at the lactam nitrogen atom, to C3 and C4, respectively.

Asymmetric Oxidation

S. Colonna,* V. Pironti, F. Zambianchi, G. Ottolina, N. Gaggero, G. Celentano .... **363−368**

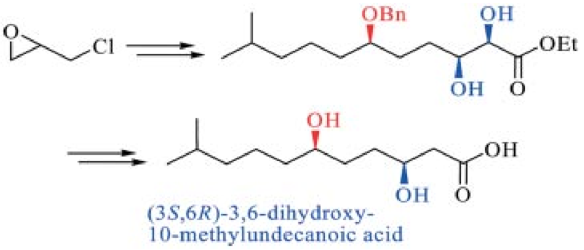
Diastereoselective Synthesis of β-Hydroxy Sulfoxides: Enzymatic and Biomimetic Approaches

Keywords: Sulfoxides / Cyclohexanone monooxygenase / Kinetic resolution / Bovine serum albumin / Enzyme catalysis / Asymmetric oxidation



An enzymatic route to enantiomerically enriched β-hydroxy sulfoxides is described.

Total Synthesis



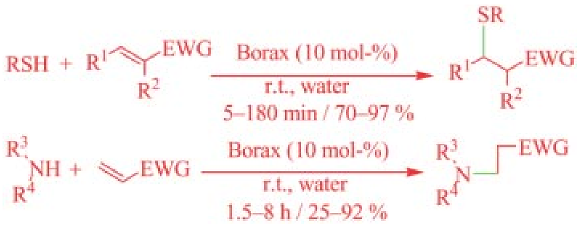
An efficient enantioselective synthesis of (−)-(3*S*,6*R*)-3,6-dihydroxy-10-methylundecanoic acid from epichlorohydrin is described. The key steps include Jacobsen's hydrolytic kinetic resolution, Sharpless asymmetric dihydroxylation, regioselective opening of epoxide and cyclic sulfate.

S. Kumar Pandey, P. Kumar* ..... 369−373

Efficient Total Synthesis of (−)-(3*S*,6*R*)-3,6-Dihydroxy-10-methylundecanoic Acid

Keywords: Jacobsen's hydrolytic kinetic resolution (HKR) / Grignard reaction / Hydroboration−oxidation / Dihydroxylation / Regioselective / Cyclic sulfate

Clean Hetero-Michael Reactions



Borax very efficiently catalyzes the conjugate addition of thiols, dithiols and amines to α,β-unsaturated ketones, nitriles, amides, aldehydes and esters in water at room temperature.

**S. Hussain, S. K. Bharadwaj,
M. K. Chaudhuri,* H. Kalita** ..... 374−378

Borax as an Efficient Metal-Free Catalyst for Hetero-Michael Reactions in an Aqueous Medium

Keywords: Borax / Thiols / Amines / Water / Michael addition

Geminal Diacylates

The geminal diacylates of a variety of aldehydes were prepared in good yields without any catalysts or solvent by simply refluxing the aldehydes with aliphatic acid anhydrides. The scope of the reactions and relative reactivities of aldehydes and acid anhydrides were examined.

$$\text{R–CHO} \xrightarrow[\text{reflux, 1–6 h}]{(\text{R'CO})_2\text{O}} \text{R–CH(OCOR')}_2$$

R = alkyl and substd. phenyl, and furyl
R' = CH_3, CH_2CH_3

**M. A. F. M. Rahman,
Y. Jahng*** .... 379−383

Preparation of Geminal Diacylates (Acylals) of Aldehydes − Scope and Reactivity of Aldehydes with Acid Anhydrides

Keywords: Geminal diacylate / Aldehydes / Acylals / Green chemistry