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NETHERLANDS

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 cationic rhodium(I)/H_8-binap complex catalyzed [2+2+2] cycloadditions of 1,6- and 1,7-diynes with carbonyl compounds, leading to dienones. The present rhodium catalysis allows both electron-rich and electron-deficient carbonyl compounds, including acyl phosphonates, to be used. In the reactions involving bifunctional carbonyl compounds or unsymmetrical 1,6-diynes, high chemo- or regioselectivities were observed. Details are discussed in the article by K. Tanaka et al. on p. 2737ff.

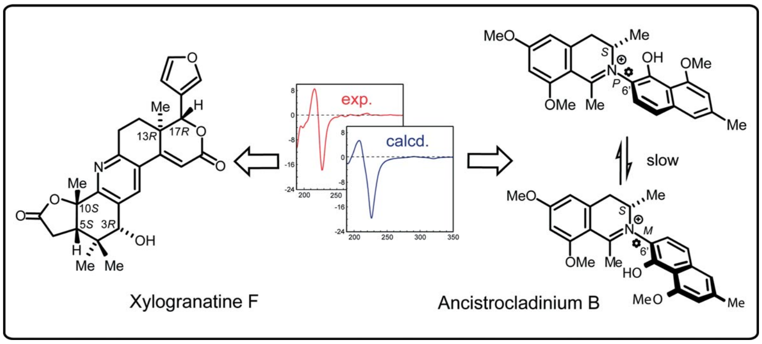
MICROREVIEW

Elucidation of Absolute Configurations

G. Bringmann,* T. Bruhn, K. Maksimenka, Y. Hemberger **2717–2727**

The Assignment of Absolute Stereostructures through Quantum Chemical Circular Dichroism Calculations

Keywords: Absolute configuration / Natural products / Circular dichroism / Semiempirical calculations / Density functional calculations / Chirality



The elucidation of the absolute configuration of a chiral compound is a task that every organic chemist will certainly have to face some day. An efficient and reliable method to solve this problem is the combination of experimental electronic circular dichroism (CD) investigations with quantum chemical CD calculations.

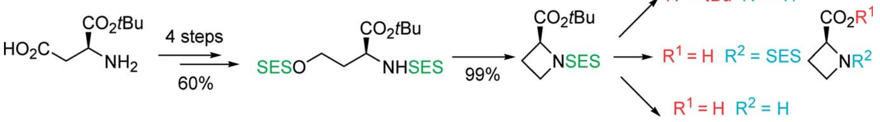
SHORT COMMUNICATIONS

Cyclic Amino Acids

M. Bouazaoui, J. Martinez, F. Cavelier* **2729–2732**

Direct Access to L-Azetidine-2-carboxylic Acid

Keywords: Azetidines / Amino acids / Asymmetric synthesis / Alkylation / Microwave chemistry



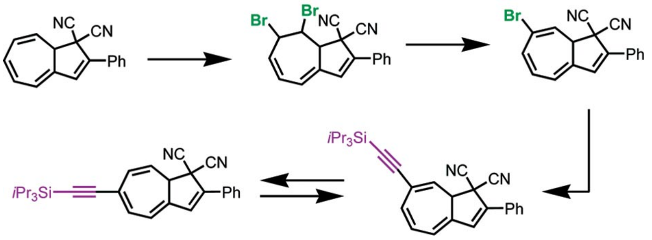
A convenient and rapid synthesis of L-azetidine-2-carboxylic acid is described starting from commercially available L-aspartic acid with conservation of the chiral center. After double activation with the SES group, a four-membered ring was formed by intramolecular N-alkylation in quantitative yield with the assistance of microwave heating.

Dihydroazulene Photoswitches

M. Å. Petersen, S. L. Broman, A. Kadziola, K. Kilså, M. B. Nielsen* **2733–2736**

Dihydroazulene Photoswitches: The First Synthetic Protocol for Functionalizing the Seven-Membered Ring

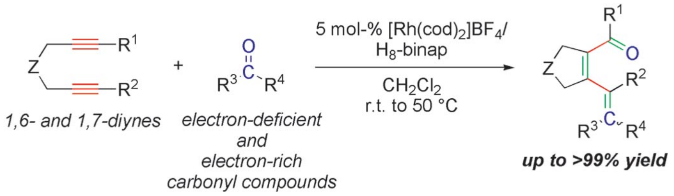
Keywords: Alkynes / Cross-coupling / Dihydroazulene / Photoswitches / Vinylheptafulvene / Photochemistry



The first synthetic protocol for functionalizing the dihydroazulene photoswitch in its seven-membered ring has been developed.

FULL PAPERS

[2+2+2] Cycloaddition



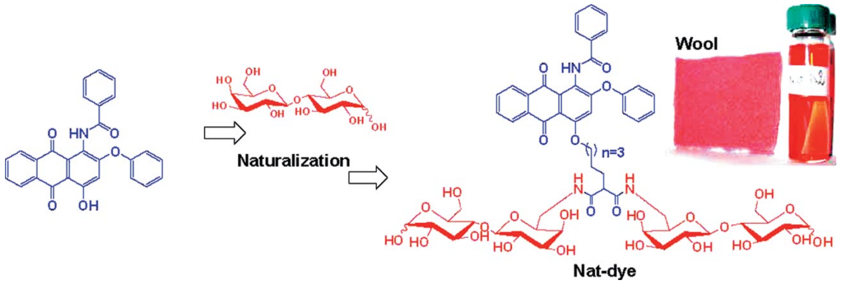
A cationic rhodium(I)/H_8-binap complex catalyzes [2+2+2] cycloadditions of a variety of 1,6- and 1,7-diynes with both electron-deficient and electron-rich carbonyl compounds to produce dienones in high yield under mild reaction conditions.

Y. Otake, R. Tanaka,
K. Tanaka* 2737–2747

Cationic Rhodium(I)/H_8-binap Complex Catalyzed [2+2+2] Cycloadditions of 1,6- and 1,7-Diynes with Carbonyl Compounds

Keywords: Carbonyl compounds / Cycloaddition / Enones / Diynes / Rhodium

Naturalised Dyes



A new class of dyes called “naturalised” have been synthesised through a glycoconjugation process and consist of two units of lactose derivatives covalently bonded to malonic acid as a spacer. The new naturalised dyes are water-soluble, even in the case of large molecules, and behave as multipurpose dyes in a simple, linear, mild dyeing process.

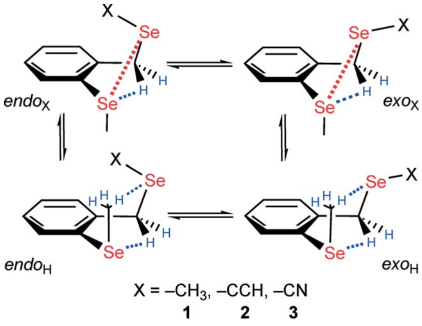
J. Isaad, M. Rolla,
R. Bianchini* 2748–2764

Synthesis of Water-Soluble Large Naturalised Dyes Through Double Glycoconjugation

Keywords: Azo compounds / Dyes/Pigments / Quinones / Carbohydrates / Glycoconjugation

Nonbonding Interactions

2-(Methlyselenyl)benzyl selenides **1**–**3** have been synthesized and interactions between selenium centers explored. The ^{77}Se NMR chemical shifts of the Se centers and the $^4J_{\mathrm{Se,Se}}$ coupling constants point to an Se···Se interaction in solution. These results were underpinned by quantum chemical calculations.

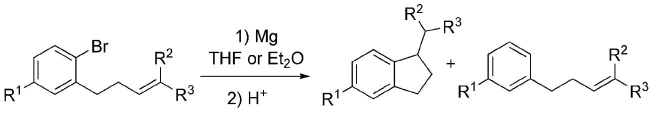


A. Lari, C. Bleiholder, F. Rominger,
R. Gleiter* 2765–2774

Intramolecular Nonbonded Interactions Between Divalent Selenium Centers with Donor and Acceptor Substituents

Keywords: van der Waals interactions / NMR spectroscopy / Selenium / Hydrogen bonds / Density functional calculations

Grignard Reagents



R^1 = H or OMe
R^2 = H, Ph or *p*-OMe-C_6H_4
R^3 = H or Ph

The reactions of a new set of radical probes with magnesium are examined. Structural variations suggest that the phenyl group could play the role of electron transfer mediator such that the participation of the radical route to the overall selectivity is increased. These observations provide an explanation for the selectivity of reactions occurring at the metal/solution interface.

H. Hazimeh, J.-M. Mattalia,*
C. Marchi-Delapierre, F. Kanoufi,
C. Combellas, M. Chanon 2775–2787

Structural Effects in Radical Clocks and Mechanisms of Grignard Reagent Formation: Special Effect of a Phenyl Substituent in a Radical Clock when the Crossroads of Selectivity is at a Metal/Solution Interface

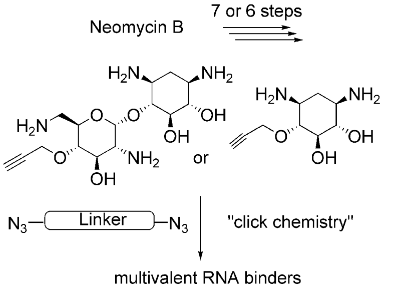
Keywords: Grignard reagent / Electron transfer / Diffusion and selectivity / Radicals / Radical probe / Substituent effects / Reaction mechanisms

RNA Binders

C. M. Klemm, A. Berthelmann, S. Neubacher, C. Arenz* **2788–2794**

Short and Efficient Synthesis of Alkyne-Modified Amino Glycoside Building Blocks

Keywords: RNA / RNA recognition / Glycosides / Amino glycosides / Click chemistry / Alkynes



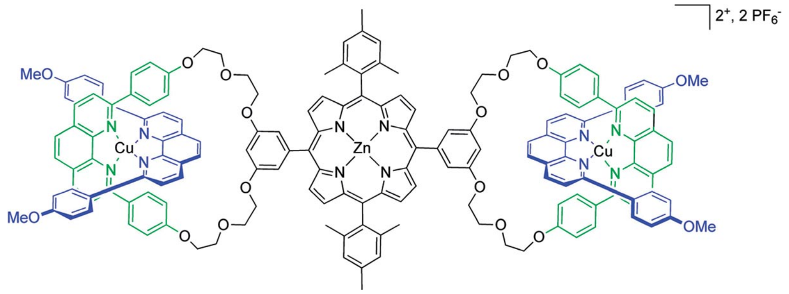
Building blocks for a library of RNA binders: A short and efficient synthesis to alkyne-modified neamine and 2-deoxystreptamine is presented. These building blocks were dimerized by chemoselective copper-catalyzed 1,3-dipolar cycloaddition to diazides (“click chemistry”). After conjugation, no further deprotection steps were necessary.

Pseudorotaxanes

C. Roche, A. Sour,* F. Niess, V. Heitz, J.-P. Sauvage* **2795–2800**

A Zinc Porphyrin Bearing Two Lateral dpp-Containing Rings and Its [3]Pseudorotaxane (dpp: 2,9-diphenyl-1,10-phenanthroline)

Keywords: Rotaxanes / Copper / Porphyrins / Macrocycles / Template synthesis



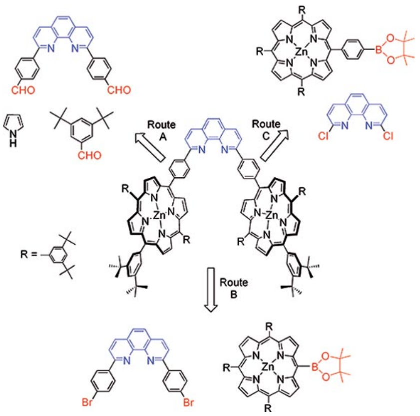
The synthesis of a zinc-complexed porphyrin bearing two coordinating macrocycles *trans* to each other is described. The ring-containing ligands are 2,9-diphenyl-1,10-phenanthroline derivatives. The copper(I)-driven threading reaction of two 2,9-dianisyl-1,10-phenanthroline chelates through the rings affords a [3]pseudorotaxane quantitatively.

Gable Bis(porphyrin)s

M. Beyler, C. Beemelmanns, V. Heitz,* J.-P. Sauvage **2801–2805**

Various Synthetic Routes to a Gable-Like Bis(porphyrin) Constructed on a 1,10-Phenanthroline Chelate

Keywords: Synthesis design / Porphyrinoids / Cross-coupling / Macrocycles



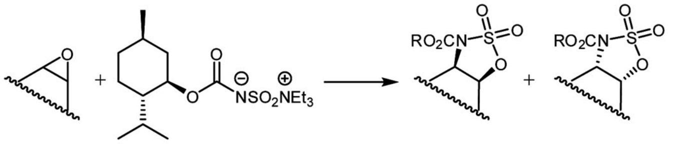
The synthesis of a gable-like bis(porphyrin) constructed on a 1,10-phenanthroline chelate by three different approaches is described.

Epoxides and Burgess Reagent

H. Leisch, B. Sullivan, B. Fonovic, T. Dudding, T. Hudlicky* **2806–2819**

New Options for the Reactivity of the Burgess Reagent with Epoxides in Both Racemic and Chiral Auxiliary Modes – Structural and Mechanistic Revisions, Computational Studies, and Application to Synthesis

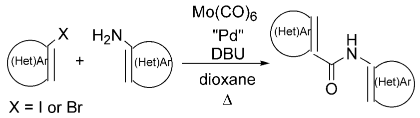
Keywords: Burgess reagent / Chiral auxiliaries / Enantioselectivity / Amino alcohol derivatives / Sulfamidate synthesis / Balanol / Density functional calculations / Structure revisions



The menthyl chiral auxiliary version of the Burgess reagent provides for the synthesis of diastereomeric *cis*-sulfamidates from epoxides and leads to optically pure β-amino alcohol derivatives. Mechanistic insight and structural revisions of previously reported results are provided, along with a Density Functional Theory computational study.

Aminocarbonylation

Di(hetero)arylamides have been synthesized by palladium-catalysed aminocarbonylation of (hetero)aryl halides with $[Mo(CO)_6]$ and (hetero)arylamines in short reaction times using conventional heating.



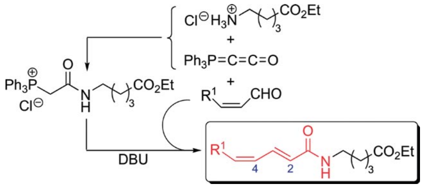
A. Begouin, M.-J. R. P. Queiroz* 2820–2827

Palladium-Catalysed Multicomponent Aminocarbonylation of Aryl or Heteroaryl Halides with $[Mo(CO)_6]$ and Aryl- or Heteroarylamines Using Conventional Heating

Keywords: Aminocarbonylation / Multicomponent reactions / Halides / Amines / Palladium / Amides

(2*E*,4*Z*)-Dienamide Synthesis

(2*E*,4*Z*)-Dienamides were prepared by a modified intermolecular three-component synthesis between ethyl 5-aminopentanoate hydrochloride as the amine component, the cumulated ylide Ph_3PCCO and (2*Z*)-alkenals. No isomerization of the (*Z*)-C=C double bond was observed during reaction.

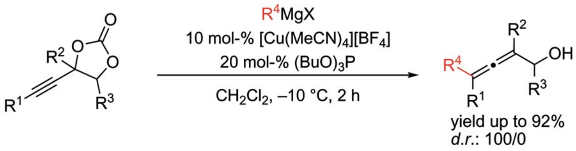


S. Pachali, C. Hofmann, G. Rapp, R. Schobert, A. Baro, W. Frey, S. Laschat* 2828–2835

Stereoselective Synthesis of (2*E*,4*Z*)-Dienamides Employing (Triphenylphosphoranylidene)ketene

Keywords: Aldehydes / C–C coupling / Synthetic methods / Wittig reactions / Ylides

Copper Catalysis



A range of primary and secondary α-hydroxyallenes were synthesized in good to excellent yields utilizing a newly developed copper-catalyzed S_N2' substitution of propargylic dioxolanones with Grignard reagents as nucleophiles. The reaction is highly *anti*-selective, the desired α-hydroxyallenes were obtained in excellent diastereoselectivity.

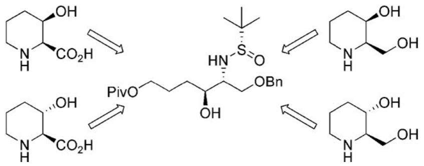
X. Tang, S. Woodward,* N. Krause* 2836–2844

Synthesis of α-Hydroxyallenes by Copper-Catalyzed S_N2' Substitution of Propargylic Dioxolanones

Keywords: Allenes / Copper / Homogeneous catalysis / Nucleophilic substitution / Grignard reaction

Asymmetric Synthesis

Both *cis*- and *trans*-3-hydroxy-L-pipecolic acids can be synthesized from a common chiral intermediate by a short and flexible route. Unlike the chiral pool approach, the new procedure is not limited by the availability of starting materials.



B. Wang,* R.-H. Liu 2845–2851

Stereospecific, Flexible and Redox-Economic Asymmetric Synthesis of *cis*- and *trans*-3-Hydroxypipecolic Acids and Analogs

Keywords: Asymmetric synthesis / Amino acids / Amino alcohols / Total synthesis

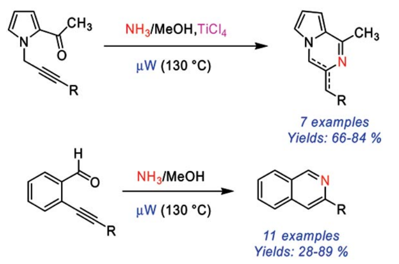
CONTENTS

Tandem Imination/Annulation

M. Alfonsi, M. Dell'Acqua, D. Facoetti, A. Arcadi, G. Abbiati,* E. Rossi **2852–2862**

Microwave-Promoted Synthesis of *N*-Heterocycles by Tandem Imination/Annulation of γ- and δ-Ketoalkynes in the Presence of Ammonia

Keywords: Alkynes / Heterocycles / Domino reactions / Microwaves / Titanium



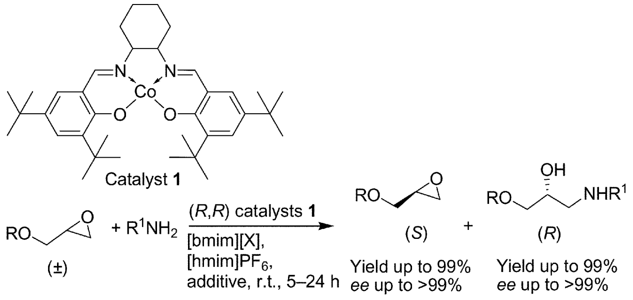
2-Acetyl-1-propargylpyrroles and 2-alkynylbenzaldehydes were demonstrated to be suitable building blocks for the synthesis of pyrrolo[1,2-*a*]pyrazine and isoquinoline nuclei. $TiCl_4$ and/or microwave heating efficiently promoted the domino imination/annulation reaction. The mechanism and selectivity were discussed on the basis of computational and spectroscopic data.

Aminolytic Kinetic Resolution

R. I. Kureshy,* K. J. Prathap, S. Agrawal, M. Kumar, N. H. Khan, S. H. R. Abdi, H. C. Bajaj **2863–2871**

Highly Efficient Recyclable $\mathrm{Co^{III}}$–salen Complexes in the Catalyzed Asymmetric Aminolytic Kinetic Resolution of Aryloxy/Terminal Epoxides for the Simultaneous Production of *N*-Protected 1,2-Amino Alcohols and the Corresponding Epoxides in High Optical Purity

Keywords: Asymmetric catalysis / Cobalt / Kinetic resolution / Epoxides / Amino alcohols / Carbamates



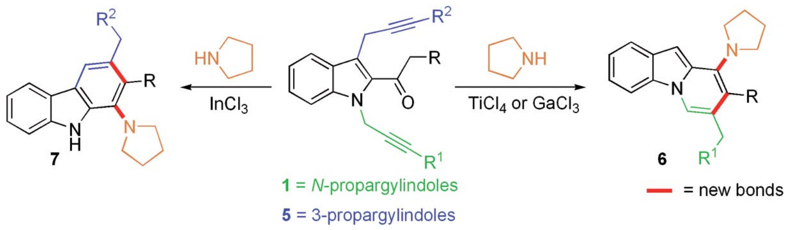
Chiral $\mathrm{Co^{III}}$–salen-catalyzed aminolytic kinetic resolution of racemic aryloxy/terminal epoxides with carbamates in various ionic liquids at room temp. gives *N*-protected 1,2-amino alcohols in excellent yields (>99%) with high regio- and enantioselectivities (*ee* >99%) along with the corresponding epoxides in high chiral purity (*ee* up to >99%) in 5 h.

Domino Reactions

D. Facoetti, G. Abbiati, E. Rossi* **2872–2882**

Lewis Acid Mediated Aminobenzannulation Reactions of δ-Ketoalkynes: Synthesis of 1-Aminocarbazoles and 9-Aminopyrido[1,2-*a*]indoles

Keywords: Alkynes / Enamines / Heterocycles / Lewis acids / Domino reactions



The synthesis of 1-aminocarbazole and 9-aminopyrido[1,2-*a*]indole derivatives starting from pyrrolidine and δ-ketoalkynes under Lewis acid catalysis is reported. The reactions proceed through a domino addition/annulation strategy allowing the coupling of two simple building blocks in a one-pot operation and giving rise to complex structures by simultaneous formation of two bonds.

RETRACTION

M. Zhang, H.-F. Jiang* **2883**

A New Multicomponent Reaction Catalyzed by a Lewis Acid Catalyst: Convenient Synthesis of Polyfunctional Tetrahydropyrimidines

Keywords: Lewis acids catalysis / Multicomponent reactions / One-pot synthesis / Tetrahydropyrimidine / Heterocycles

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* Author to whom correspondence should be addressed.

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