

COVER PICTURE

The cover picture shows a further chapter in the exciting Diels–Alder story around the natural product (–)-galiellalactone. This story started with Steglich’s proposal on the Diels–Alder biosynthesis of galiellalactone, that was then experimentally confirmed by T. Anke, H. Anke, and Sterner. The producer of galiellalactone, the ascomycete *Galiella rufa*, is shown in the background (photo by Pamela Kaminski). Now a surprising intrinsic Diels–Alder reactivity of galiellalactone has been found. Remarkable Diels–Alder transformations are triggered by acylation of the natural product. In the presented case four quaternary carbon centers are generated under mild conditions, yielding a dimer of unprecedented architecture. Details are discussed in the article by F. von Nussbaum et al. on page 2783 ff.



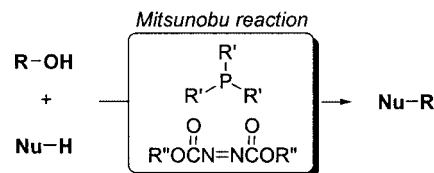
MICROREVIEWS

Contents

2763 R. Dembinski

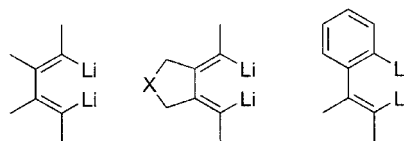
Recent Advances in the Mitsunobu Reaction:
 Modified Reagents and the Quest for Chromatog-
 raphy-Free Separation

Keywords: Mitsunobu reaction / Fluorous com-
 pounds / Phosphanes / Azo compounds /
 Phase switching



Reaction Chemistry of 1,4-Dilithio-1,3-diene and 1-Lithio-1,3-diene Derivatives

Keywords: Organolithium compounds / Bimetallic reagents / Synthetic methods

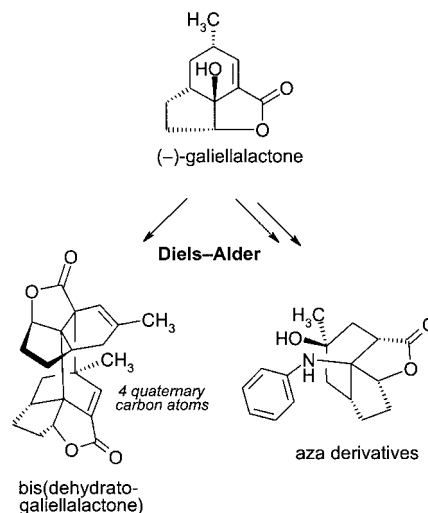


FULL PAPERS

2783 F. von Nussbaum,* R. Hanke, T. Fahrig, J. Benet-Buchholz

The High-Intrinsic Diels–Alder Reactivity of (–)-Galiellalactone; Generating Four Quaternary Carbon Centers under Mild Conditions

Keywords: Biological activity / Biosynthesis / Medicinal chemistry / Natural products / Polyketides / Signal transduction

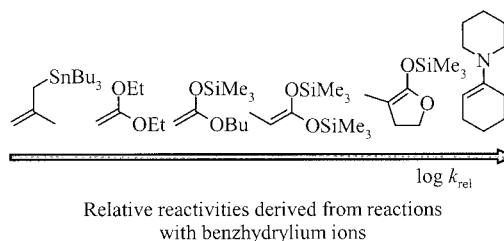


2791 T. Tokuyasu, H. Mayr*



Nucleophilic Reactivities of Ketene Acetals

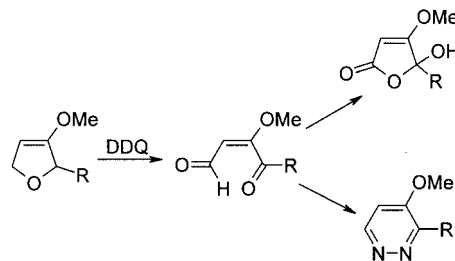
Keywords: Carbocations / C–C coupling / Kinetics / Linear free energy relationship / Substituent effects



2797 O. Flögel, H.-U. Reißig*

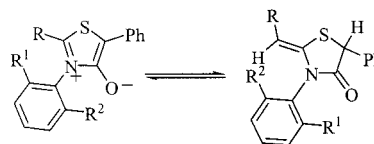
Preparation of α,β -Unsaturated γ -Keto Aldehydes and New Tetrone Acid and Pyridazine Derivatives by Oxidative Transformations of Alkoxyallene-Based Dihydrofurans

Keywords: Allenes / Furans / Oxidation / γ -Lactones / Pyridazines / Umpolung



2805 M. Ávalos, R. Babiano, P. Cintas, J. Díaz,
J. L. Jiménez, I. López, J. C. Palacios*

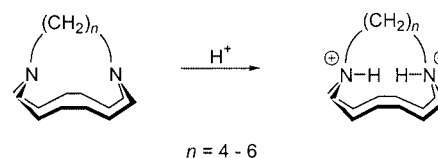
Non-Dipolar Behavior of Mesoionic Heterocycles: Synthesis and Tautomerism of 2-Alkylthioisomünchnones



Keywords: Mesoionic heterocycles / Non-biaryl atropisomers / Tautomerism / Thiazolidinones

2812 B. Pool, S. Balalaie, A. Kunze, G. Schilling,
P. Bischof, R. Gleiter*

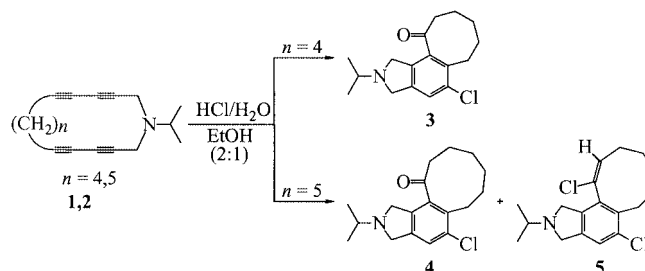
1,8-Diazabicyclo[6.6.6]eicosane, 1,8-Diazabicyclo[6.6.5]nonadecane and 1,8-Diazabicyclo[6.6.4]octadecane and Their Diprotonated Forms



Keywords: Alkynes / Medium-ring compounds / Protonation

2818 E. M. Schmidt, R. Gleiter,* F. Rominger

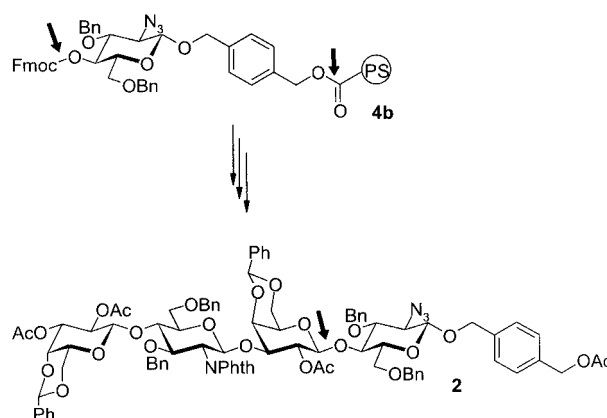
Transannular Reactions of Two Non-Parallel 1,3-Butadiyne Units – Syntheses, Structures and Protonation Reactions of 1-Isopropyl-1-azacyclopentadeca-3,5,11,13-tetrayne and 1-Isopropyl-1-azacyclohexadeca-3,5,12,14-tetrayne



Keywords: Alkynes / Cyclization / Medium-sized rings

2826 X. Wu, R. R. Schmidt*

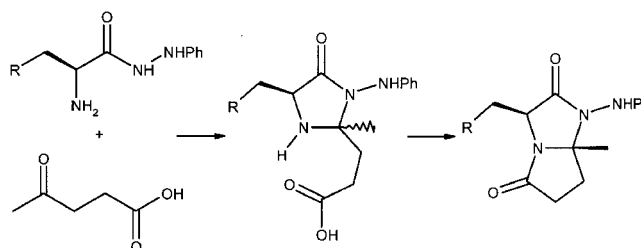
Solid-Phase Synthesis of Complex Oligosaccharides



Keywords: Azidoglucose / Carbohydrates / Oligosaccharides / Solid phase / Synthesis / Trichloroacetimidates

2833 G. Verardo,* P. Geatti, M. Merli,
E. E. Castellarin

Synthesis of 3-Substituted Dihydro-1-phenylamino-1*H*-pyrrolo[1,2-*a*]imidazole-2,5(3*H*,6*H*)-diones from α -Amino Acid Phenylhydrazides and Levulinic Acid

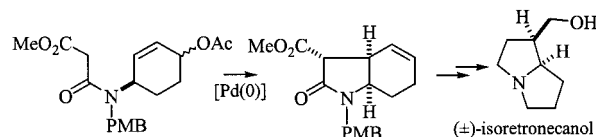


Keywords: Amino acids / Cyclization / Heterocycles / Hydrazides / Levulinic acid

2840 S. Lemaire, G. Giambastiani, G. Prestat, G. Poli*

Pyrrolizidine Alkaloids by Intramolecular Palladium-Catalysed Allylic Alkylation: Synthesis of (±)-Isoretronecanol

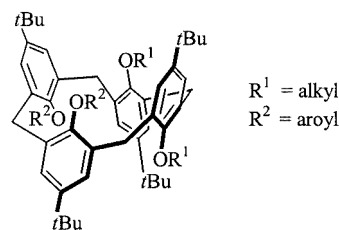
Keywords: Alkaloids / Allylic alkylation / Palladium / Synthetic methods



2848 A. W. Kleij, P. Prados, J. de Mendoza*

A Fast Access to Non-Symmetrically Substituted 1,3-Alternate Conformers of Calix[4]-arenes

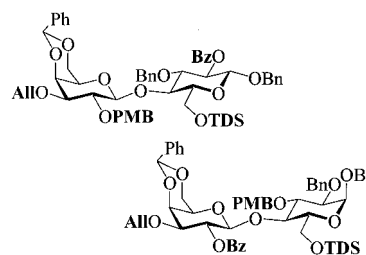
Keywords: Alkylation / Building blocks / Calixarenes / Conformation / Hydrolysis



2853 S. Castoldi, M. Cravini, F. Micheli, E. Piga, G. Russo, P. Seneci, L. Lay*

Solution Synthesis of Two Orthogonally Protected Lactosides as Tetravalent Disaccharide-Based Scaffolds

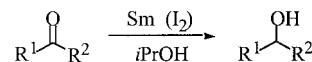
Keywords: Carbohydrate scaffolds / Lactose / Protecting groups / Solid phase synthesis



2863 S. Fukuzawa,* N. Nakano, T. Saitoh

Reduction of Carbonyl Compounds by Lanthanide Metal/2-Propanol: In-situ Generation of Samarium Isopropoxide for Stereoselective Meerwein–Ponndorf–Verley Reduction

Keywords: Lanthanides / Meerwein–Ponndorf–Verley reduction / Reductions / Samarium / Samarium alkoxide

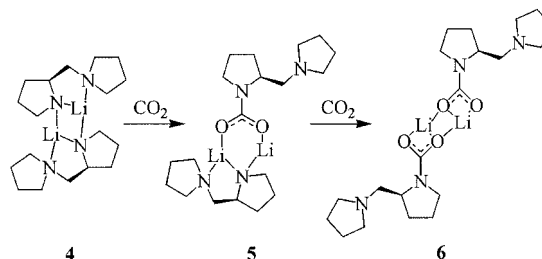


2868 S. O. Nilsson Lill,* U. Köhn, E. Anders*



Carbon Dioxide Fixation by Lithium Amides: DFT Studies on the Reaction Mechanism of the Formation of Lithium Carbamates

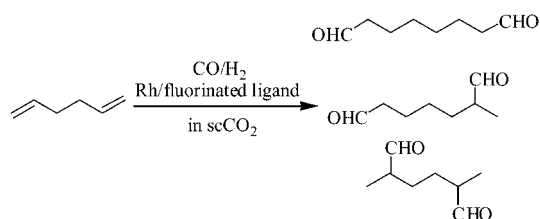
Keywords: Carbon dioxide fixation / Chiral lithium amides / Density functional calculations / Heterodimers / Reaction mechanisms



2881 S. Fujita,* S. Fujisawa, B. M. Bhanage,
Y. Ikushima, M. Arai

Hydroformylation of 1,5-Hexadiene Catalyzed by Rhodium Complexes in Supercritical Carbon Dioxide and in Toluene: Effects of Fluorinated Phosphane Ligands and Reaction Conditions

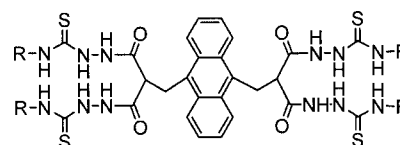
Keywords: Hydroformylation / Rhodium / Dialdehyde / Fluorinated ligand / Supercritical carbon dioxide



2888 Z.-Y. Zeng, Y.-B. He,* J.-L. Wu, L.-H. Wei,
X. Liu, L.-Z. Meng, X. Yang

Synthesis of Two Branched Fluorescent Receptors and Their Binding Properties for Dicarboxylate Anions

Keywords: Anion receptor / Fluorescence / Recognition / UV/Vis

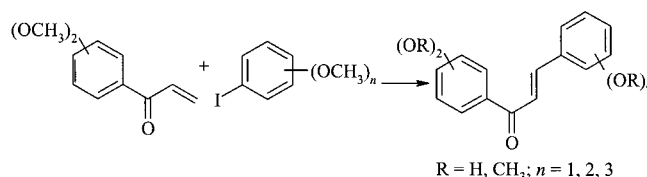


1: R = 4-CH₃-C₆H₄-, yield: 88%
2: R = 1-naphthyl-, yield: 77%

2894 A. Bianco, C. Cavarischia,* M. Guiso

The Heck Coupling Reaction Using Aryl Vinyl Ketones: Synthesis of Flavonoids

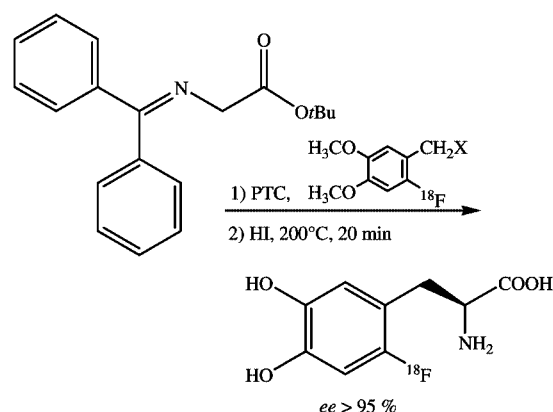
Keywords: Heck reaction / Palladium / Flavonoids / Aryl vinyl ketone



2899 C. Lemaire,* S. Gillet, S. Guillouet,
A. Plenevaux, J. Aerts, A. Luxen

Highly Enantioselective Synthesis of No-Carrier-Added 6-[¹⁸F]Fluoro-L-dopa by Chiral Phase-Transfer Alkylation

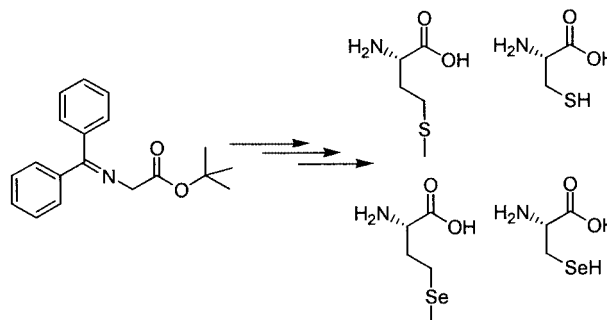
Keywords: Amino acids / Enantioselectivity / Fluorides / Radiochemistry / Radiopharmaceuticals / Phase-transfer catalysis



2905 A. H. G. Siebum, W. S. Woo, J. Raap,
J. Lugtenburg*

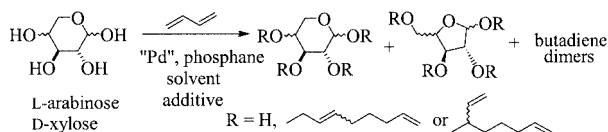
Access to Any Site-Directed Isotopomer of Methionine, Selenomethionine, Cysteine, and Selenocysteine – Use of Simple, Efficient Modular Synthetic Reaction Schemes for Isotope Incorporation

Keywords: Amino acids / Chirality / Cystathionine / Homocysteine / Isotope labels / Selenohomocysteine / Site-directed isotopomers / Vinylglycine



2914 B. Estrine, S. Bouquillon, F. Hénin,*
J. Muzart

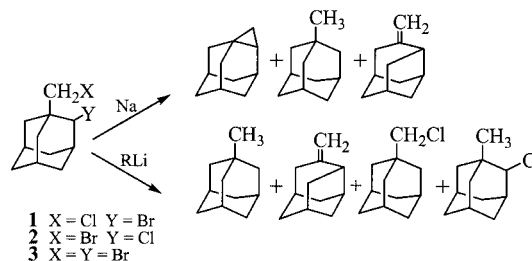
Telomerization of Butadiene with L-Arabinose and D-Xylose in DMF: Selective Formation of their Mono-octadienyl Glycosides



Keywords: Butadiene telomerization / Free pentoses / Palladium catalysis / Octadienyl pentosides

2923 K. Mlinarić-Majerski,* J. Veljković,
M. Kaselj, A. P. Marchand

Dihaloadamantanes: Ring Closure versus Rearrangement or Halogen-Displacement Reactions

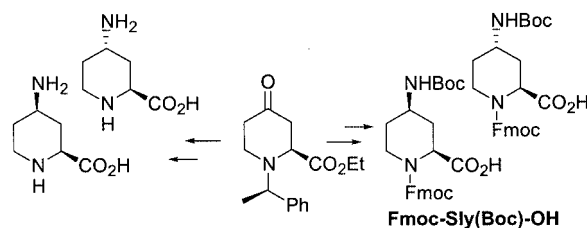


Keywords: Dihaloadamantanes / Ring closure / Rearrangement / Halogen displacement / Cyclization

2928 F. Machetti,* F. M. Cordero, F. De Sarlo,
A. M. Papini, M. C. Alcaro, A. Brandi



Synthesis of Free and *N*^α-Fmoc-/N^γ-Boc-Protected (2*S*,4*S*)- and (2*S*,4*R*)-4-Aminopiperic Acids

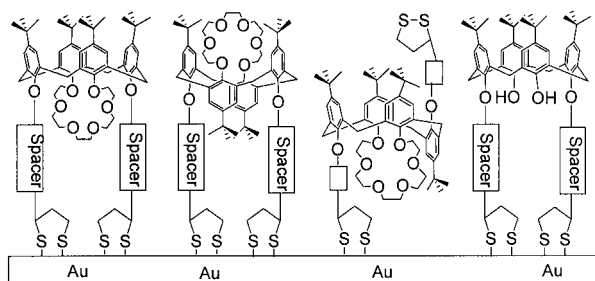


Keywords: Constrained amino acids / Natural products / Reductive amination

2936 S. Zhang, F. Song, L. Echegoyen*



Synthesis, Self-Assembled Monolayers and Alkaline Earth Metal Ion Recognition of *p*-tert-Butylcalix[4]arene Derivatives



Keywords: Calixarenes / Metal ions / Monolayers / Molecular recognition / Self-assembly