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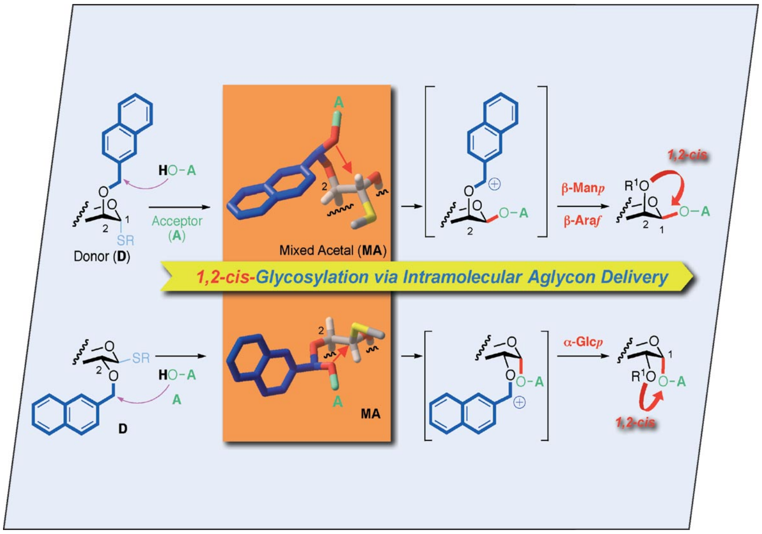
The EUChemSoc Societies have taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry.* Three further EUChemSoc Societies (Austria, Czech Republic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

COVER PICTURE

The cover picture shows the general outline for 2-naphthylmethyl (NAP) ether mediated intramolecular aglycon delivery (NAP-IAD). The initial formation of the mixed acetal (**MA**) from the NAP ether protected glycosyl donor (**D**) having the *manno*- or *gluco*-configuration at the C2 position and the glycosyl acceptor (**A**), followed by stereoselective intramolecular glycosylation, afforded the desired 1,2-*cis* glycoside in high yield. Stereospecific constructions of various 1,2-*cis* linkages, such as β-mannopyrano-, β-arabinofurano- and α-glucopyranosides, were achieved through NAP-IAD. Details are discussed in the article by A. Ishiwata, Y. Munemura and Y. Ito on p. 4250ff.



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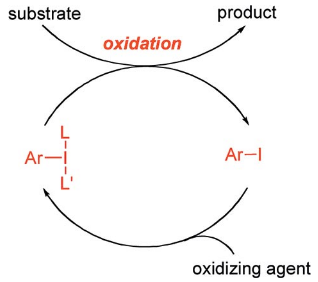
MICROREVIEW

λ^3- and λ^5-Iodane Oxidation Catalysis

M. Ochiai,* K. Miyamoto 4229–4239

Catalytic Version of and Reuse in Hypervalent Organo-λ^3- and -λ^5-iodane Oxidation

Keywords: Catalytic oxidation / Iodine / Hypervalent / Polymer / Reuse



This microreview provides an overview of the recently developed aryl iodide-catalyzed oxidations in which hypervalent organoiodanes serve as real oxidants. Recent attempts to improve the efficiency of recyclable hypervalent organoiodanes in oxidations are also summarized.

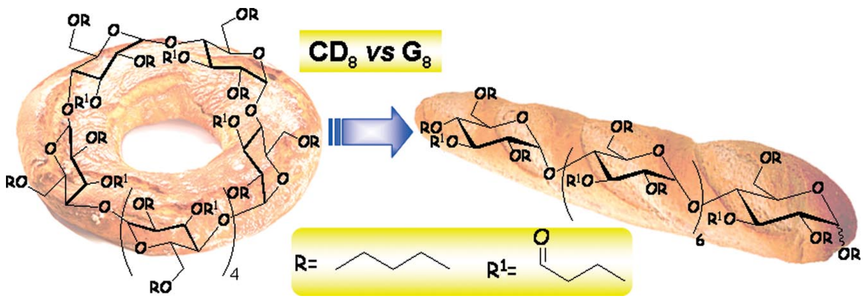
SHORT COMMUNICATION

Enantiorecognition

G. Sicoli,* I. Tomoyuki, L. Jicsinszky, V. Schurig 4241–4244

A Maltooctaose Derivative ("Acyclodextrin") as a Chiral Stationary Phase for Enantioselective Gas Chromatography

Keywords: Gas chromatography / Enantioselectivity / Chiral resolution



The ability of the acyclic selector octakis-[(3-*O*,4′′*O*)-butanoyl-(1′-*O*,2,6-di-*O*)-*n*-pentyl]maltooctaose (G8) to serve as a chiral stationary phase in enantioselective gas chromatography is compared to that of its cyclic counterpart octakis(3-*O*-butanoyl-2,6-di-*O*-*n*-pentyl)-γ-cyclodextrin (CD8).

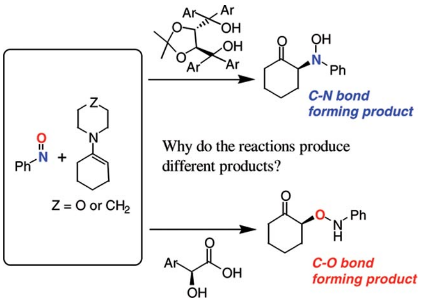
FULL PAPERS

Nitroso Aldol Reactions

M. Akakura,* M. Kawasaki, H. Yamamoto* 4245–4249

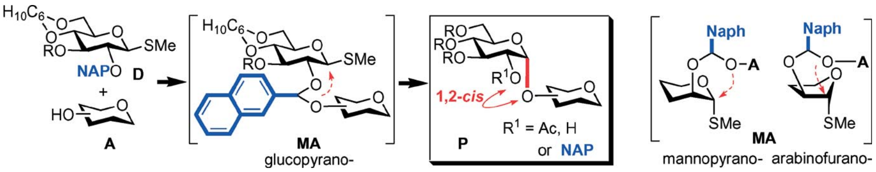
DFT Study of Brønsted Acid Catalyzed Nitroso Aldol Reaction Between Achiral Enamines and Nitrosobenzene: The Reason for Regio- and Enantioselectivity

Keywords: Density functional calculations / Nitroso aldol reaction / Regioselectivity / Enantioselectivity



The important role of hydrogen-bonding interactions is manifested in the regioselectivity of the nitroso aldol reaction between achiral enamines and nitrosobenzene catalyzed by organic acids. The interactions play a role in fixing the transition-state structure and this role is also important for the enantioselectivity.

Stereoselective 1,2-*cis*-Glycosylation



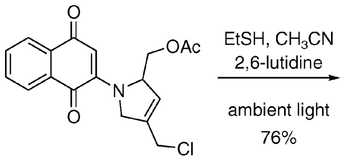
A methodology directed towards the stereoselective construction of 1,2-*cis*-glycosides through naphthylmethyl (NAP) ether mediated intramolecular aglycon delivery (IAD) has been developed. Stereospecific constructions of various 1,2-*cis* linkages, as in β-mannopyrano-, β-arabinofurano-, and α-glucopyranosides, were achieved through NAP-IAD.

A. Ishiwata,* Y. Munemura, Y. Ito* **4250–4263**

NAP Ether Mediated Intramolecular Aglycon Delivery: A Unified Strategy for 1,2-*cis*-Glycosylation

Keywords: 1,2-*cis*-Glycosides / Intramolecular aglycon delivery (IAD) / Stereoselective synthesis / Glycosylation / Oligosaccharides

Photoactivated Alkylation



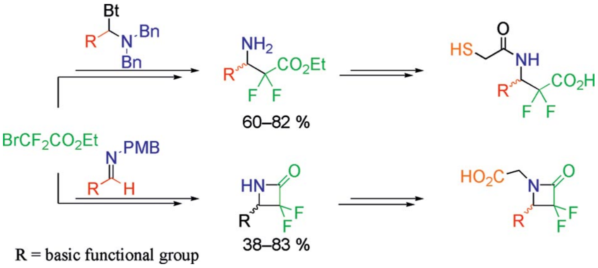
Upon exposure to ambient room light, the title compounds undergo an internal redox reaction to form 2-(pyrrol-1-yl)-1,4-hydroquinones, which are activated for nucleophilic addition by an S_N1 azafulvene mechanism. In the presence of nucleophiles, the reactive electrophile is trapped, and the adduct is isolated in good yield.

A. Aponick,*A. L. Dietz, W. H. Pearson **4264–4276**

2-(3-Pyrrolin-1-yl)-1,4-naphthoquinones: Photoactivated Alkylating Agents

Keywords: Quinones / Pyrroline / Michael addition / Alkylation / Photoactivation

gem-Difluoro-β-amino Acids



A two-step protocol for the synthesis of various highly functionalized *gem*-difluorinated β-lactams and β-amino esters in moderate to good yields has been developed. These valuable building blocks were alkylated or acylated under mild conditions. This methodology led to a library of new difluoro-β-lactams and difluoro-β-amino esters, which were assessed as potential metallocarboxypeptidase inhibitors.

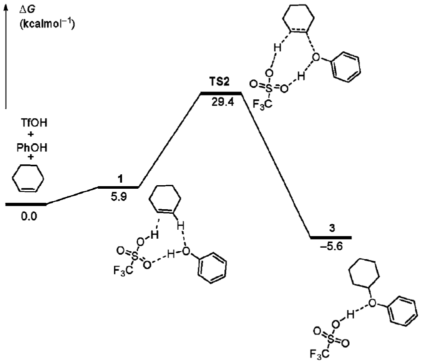
N. Boyer, P. Gloanec, G. De Nanteuil, P. Jubault,* J.-C. Quirion* **4277–4295**

Synthesis of α,α-Difluoro-β-amino Esters or *gem*-Difluoro-β-lactams as Potential Metallocarboxypeptidase Inhibitors

Keywords: β-Lactams / Fluorinated building blocks / 3,3-Difluoroazetidin-2-ones / α,α-Difluoro-β-amino acids / Reformatsky reaction

Additions to Olefins

Metal-free additions of alcohols and amines to olefins catalyzed by TfOH proceed through unexpected, concerted, eight-membered-ring transition structures with significant carbocation character. Factors affecting the reactivity, regioselectivity, and double-bond isomerization that compete with the addition were revealed by DFT calculations and AIM analysis.



X. Li, S. Ye, C. He, Z.-X. Yu* **4296–4303**

Mechanisms of Brønsted Acid Catalyzed Additions of Phenols and Protected Amines to Olefins: A DFT Study

Keywords: Nucleophilic addition / Brønsted acids / Density functional calculations / Reaction mechanisms / Alkenes

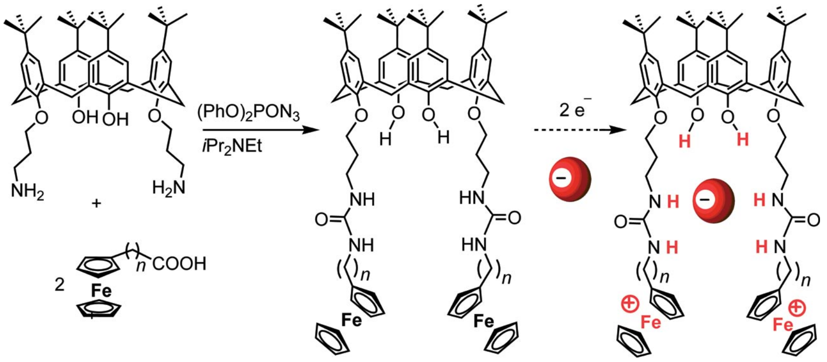
CONTENTS

Redox-Active Calixarenes

E. Métay, M. C. Duclos, S. Pellet-Rostaing, M. Lemaire,* J. Schulz, R. Kannappan, C. Bucher, E. Saint-Aman,* C. Chaix 4304–4312

Synthesis and Anion-Binding Properties of Novel Redox-Active Calixarene Receptors

Keywords: Calixarenes / Receptors / Anion-binding properties / Curtius rearrangement



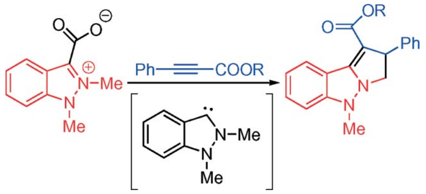
A convergent synthetic approach towards redox-active calixarene-based receptors is reported. The anion-binding properties of these receptors have been investigated by electrochemical methods, and the importance of ion-pairing effects in this electrochemical recognition process has been clearly established.

Carbene-Induced Cycloadditions

A. Schmidt,* B. Snovydovych, S. Hemmen 4313–4319

N-Heterocyclic Carbene Induced Cycloaddition Reactions of Indazoles with Acetylenes To Form a New Ring System

Keywords: Betaines / Decarboxylation / DMAD / 1,3-Dipoles / Carbenes / Cycloaddition



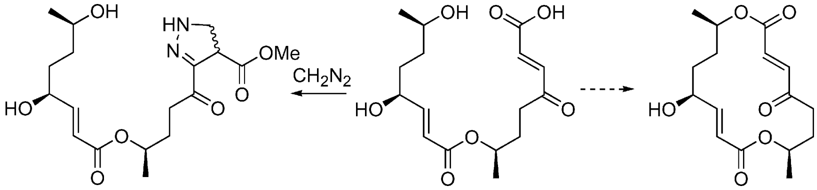
The NHC indazol-3-ylidene induces a 1,3-dipolar cycloaddition reaction between indazolium-3-carboxylate and activated acetylene derivatives, and subsequent decarboxylation gives the new ring system 3,5-dihydro-2*H*-pyrrolo[1,2-*b*]indazole. Decarboxylation was prevented by using DEAD or DMAD. Model reactions and DFT calculations were performed to elucidate the reaction mechanisms.

Natural Products

W. Zhang, K. Krohn,* H. Egold, S. Draeger, B. Schulz 4320–4328

Diversity of Antimicrobial Pyrenophorol Derivatives from an Endophytic Fungus, *Phoma* sp.

Keywords: Absolute configuration / Antimicrobial activity / Endophytic fungus / Macrodiolides / *Phoma* sp. / Pyrenophorol



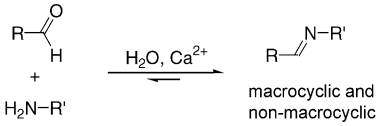
Twelve different pyrenopherol derivatives were obtained by isolation from an endopyhtic fungus or by chemical transformations. The comparison of their data enabled a complete assignment of all signals in the ^{1}H and ^{13}C NMR spectra of the pyrenophorols. The great variety of the metabolites also demonstrates the productivity of the fungus and its potential for chemical diversity.

Dynamic Combinatorial Chemistry

V. Saggiomo, U. Lüning* 4329–4333

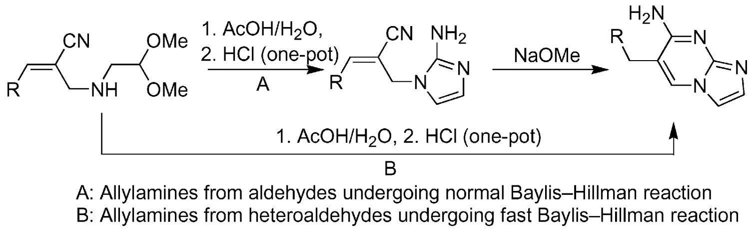
Remarkable Stability of Imino Macrocycles in Water

Keywords: Combinatorial chemistry / Imines / Macrocycles / Pyridine / Templates



Imines generated from a pyridine-2,6-dicarbaldehyde and several amines show remarkable stabilities in water.

Bridgehead Nitrogen Heterocycles



A convenient route to the imidazo[1,2-*a*]pyrimidine core by reaction of cyanamide with appropriately substituted allylamines afforded by Baylis–Hillman chemistry followed by an intramolecular cyclization is presented. The protocol was discovered to be a one-pot reaction for the allylamines generated from the heterocyclic aldehydes undergoing fast Baylis–Hillman reaction, whereas it was a two-step procedure for all other aldehydes.

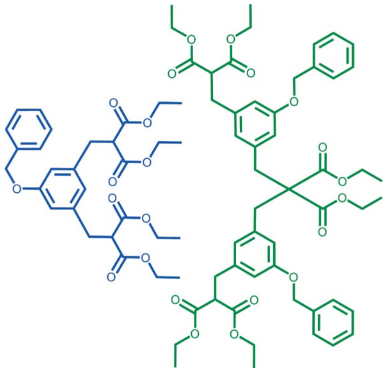
S. Nag, A. Mishra, S. Batra* ... 4334–4343

A Facile Construction of 6-(Arylmethyl)-imidazo[1,2-*a*]pyrimidin-7-ylamines from Allylamines Derived from Baylis–Hillman Adducts

Keywords: Baylis–Hillman reactions / Allylic compounds / Amines / Heterocycles

Dendrimer Synthesis

The syntheses of first-generation dendritic tetraesters from bifunctional precursors was performed in heterogeneous reaction media under microwave and/or ultrasonic irradiation in reaction times as short as 15 min and with yields around 70%.

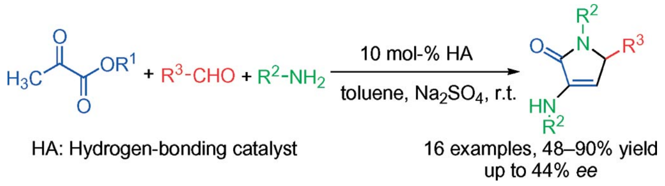


F. Wiesbrock, C. Patteux, T. K. Olszewski, A. Blanrue, G. A. Heropoulos,* B. R. Steele, M. Micha-Screttas, T. Calogeropoulou 4344–4349

Solution-Phase Synthesis of First-Generation Tetraester Dendritic Branches Involving Microwave and/or Ultrasonic Irradiation

Keywords: Dendrimers / Nucleophilic substitution / Microwave / Ultrasound

Multicomponent Reactions



Hydrogen-bonding catalysts such as thioureas and phosphoric acids have been found to catalyze one-pot three-component reactions of pyruvate, anilines and aldehydes to afford versatile 3-amino-1,5-dihydro-2*H*-pyrrol-2-ones in high yields. The corresponding chiral catalysts have also been used in these three-component reactions to give pyrrol-2-ones in high yields and moderate *ee*s.

X. Li, H. Deng, S. Luo,* J.-P. Cheng* 4350–4356

Organocatalytic Three-Component Reactions of Pyruvate, Aldehyde and Aniline by Hydrogen-Bonding Catalysts

Keywords: Hydrogen bonds / Multicomponent reactions / Chirality / Phosphoric acids / Thioureas / Asymetric catalysis

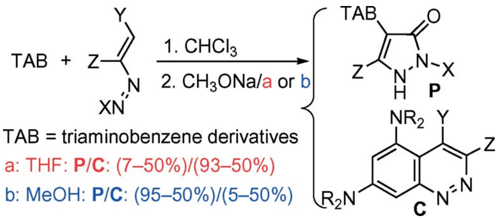
CONTENTS

Heterocycles from Semicarbazones

L. Forlani,* O. A. Attanasi, C. Boga, L. De Crescentini, E. Del Vecchio, G. Favi, F. Mantellini, S. Tozzi, N. Zanna .... 4357−4366

💻 Unusual Reactions Between Aromatic Carbon Supernucleophiles and 1,2-Diazabuta-1,3-dienes: Useful Routes to New Pyrazolone and Cinnoline Derivatives

Keywords: Aromatic substitution / Cyclization / Heterocycles / Michael additions



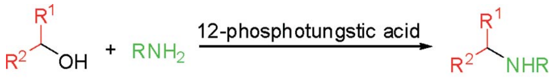
Michael-like additions of supernucleophiles (**TAB**s) to 1,2-diazabuta-1,3-dienes (**DBD**s) under neutral conditions give semicarbazones, which under basic conditions produce new pyrazolones and cinnolines. The unexpected formation of the cinnoline ring occurs through an intramolecular S_NAr process involving the displacement of a secondary amino group and represents a new route to cinnoline derivatives.

Amidation of Alcohols

G.-W. Wang,* Y.-B. Shen, X.-L. Wu .... 4367−4371

Phosphotungstic Acid Catalyzed Amidation of Alcohols

Keywords: Amidation / C−N bond formation / Heteropoly acids / Nucleophilic substitution / Catalyst recycling



up to 98% yield
23 examples

Nucleophilic substitution reactions of benzhydrylic, benzylic, allylic, and simple aliphatic alcohols with sulfonamides, benzamide, and 4-nitroaniline in the presence of phosphotungstic acid as an efficient, eco-friendly, cheap, and air- and moisture-tolerant catalyst for the construction of C−N bonds has been investigated.

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* Author to whom correspondence should be addressed.

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