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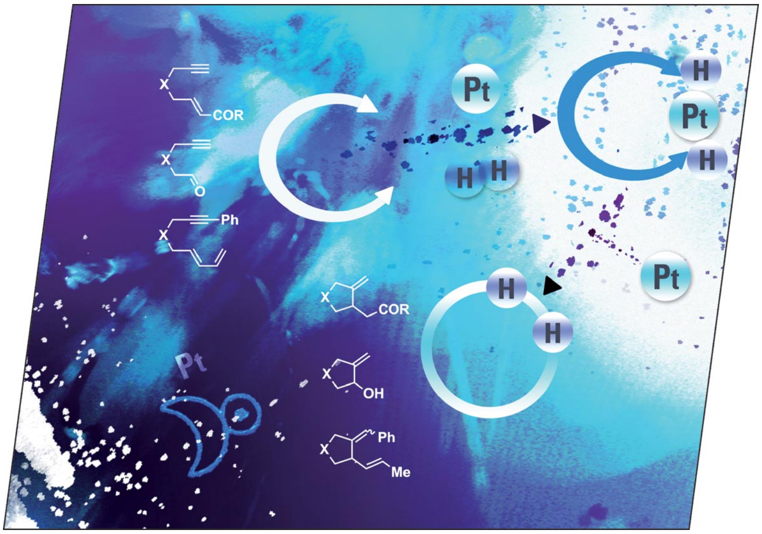
A union formed by chemical societies in Europe (ChemPubSoc Europe) has taken the significant step into the future by merging their traditional journals, to form two leading chemistry journals, the *European Journal of Inorganic Chemistry* and the *European Journal of Organic Chemistry*. Three further members of ChemPubSoc Europe (Austria, Czech Republic and Sweden) are Associates of the two journals.

COVER PICTURE

The cover picture shows Pt-catalyzed reductive cyclizations under environmentally benign hydrogenation conditions. In a reaction vessel equipped with a hydrogen balloon, the Pt complex catalyzed the cyclizations of yne-enones, yne-aldehydes, and yne-dienes to form five- and six-membered rings. The reaction scope and deuterium labeling studies show the expanded reactivity of the Pt complex for the hydrogenative cyclization of various π systems. Details are discussed in the Short Communication by H.-Y. Jang et al. on page 6091ff. The authors acknowledge Won-Seob Cho for the cover page design.



CONTENTS

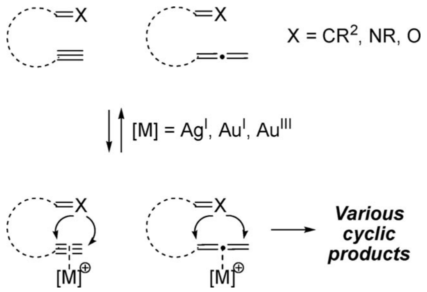
MICROREVIEW

Silver and Gold Cycloisomerization

P. Belmont,* E. Parker 6075–6089

Silver and Gold Catalysis for Cycloisomerization Reactions

Keywords: Silver / Gold / Cycloisomerization / Homogeneous catalysis / Cyclization



In a "golden world", silver-based opportunities for cycloisomerization reactions are also outlined. We offer a quick overview of the usefulness of each metal along with counterion effects. The need of some gold catalysts for activation through silver anion metathesis is also discussed, because it links two coinage metals of increasing interest in the field of organometallic chemistry.

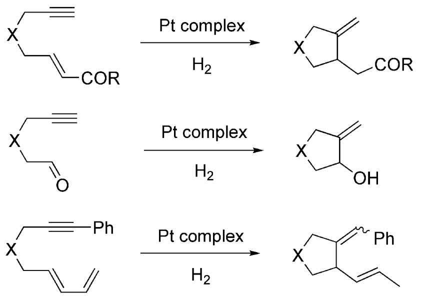
SHORT COMMUNICATIONS

Hydrogenative Cyclization

M. P. Shinde, X. Wang, E. J. Kang, H.-Y. Jang* 6091–6094

Platinum-Catalyzed Hydrogenative Cyclization of Yne-Enones, Yne-Aldehydes, and Yne-Dienes

Keywords: Platinum / Cyclization / Hydrogenation / Alkynes / Enones / Aldehydes / Alkenes



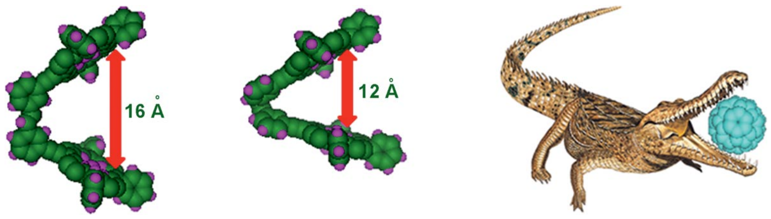
Using Pt^{II} complexes and hydrogen, the reductive cyclizations of yne-enones, yne-aldehydes, and yne-dienes were conducted, which showed expanded reactivity of the Pt–alkyne complex with various electrophiles.

Porphyrin Jaws

M. Fathalla, J. Jayawickramarajah* 6095–6099

Configurational Isomers of a Stilbene-Linked Bis(porphyrin) Tweezer: Synthesis and Fullerene-Binding Studies

Keywords: Porphyrin jaws / Self-assembly / Tweezers / Supramolecular chemistry



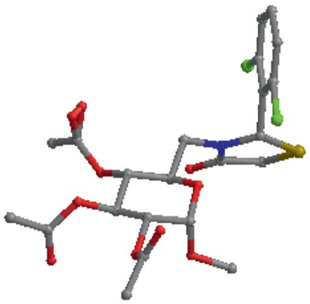
A new stilbene-tethered bis(porphyrin) tweezer has been synthesized that exists as two configurational isomers. UV/Vis, fluorescence, and MALDI-TOF studies have demonstrated that the (*Z*) isomer exhibits a significantly larger affinity towards fullerenes. The photoisomerization of the high-affinity (*Z*) isomer to the low-affinity (*E*) configuration is also discussed.

Pseudonucleosides

H. Chen, H. Zhang, J. Feng, X. Li,* L. Jiao, Z. Qin, Q. Yin, J. Zhang 6100–6103

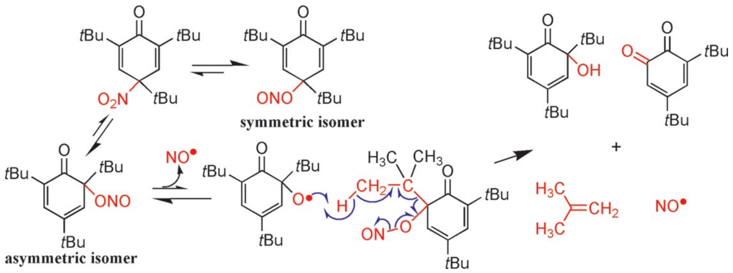
A Convenient Synthesis and Biological Evaluation of Novel Pseudonucleosides Bearing a Thiazolidin-4-one Moiety by Tandem Staudinger/Aza-Wittig/Cyclization

Keywords: Pseudonucleosides / Heterocycles / Wittig reactions / Biological activity



Novel pseudonucleosides bearing a thiazolidin-4-one moiety were synthesized by a one-pot, multicomponent, tandem Staudinger/aza-Wittig/intermolecular nucleophilic addition/intramolecular cyclization process, and then deacetylated to afford the corresponding products. The biological activities of the deacetylated compounds were evaluated.

NO Radical Chemistry



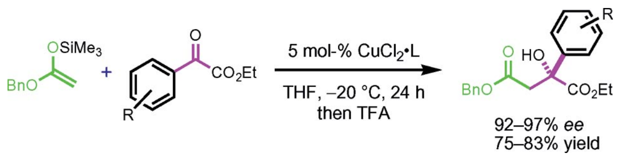
2,4,6-Tri-*tert*-butyl-4-nitrocyclohexadienone slowly rearranges into two nitrites (R-ONO) under vacuum. One of these isomers undergoes homolytic cleavage, releasing the free NO radical. The resulting oxyl radical undergoes a concerted reaction with the asymmetric nitrite isomer, resulting in bond activation within the *tert*-butyl and nitrite moieties, to form the final products.

S. J. Peters,* T. M. Blood,
M. E. Kassabaum 6104–6108

The Slow Rearrangement of a Sterically Hindered Nitro-Cyclohexadienone and the Absence of Phenol Oxidation by Nitrogen Monoxide

Keywords: Bond homolysis / Nitrogen oxides / Radical reactions / Rearrangement

Asymmetric Aldol Reaction



The asymmetric aldol reaction of silyl ketene acetals of simple esters to α-keto esters is reported. The reaction is tolerant of substrate variation and excels with aryl α-keto esters. The process uniquely employs inexpensive esters rather than costly thioesters.

J. Le Engers,
B. L. Pagenkopf* 6109–6111

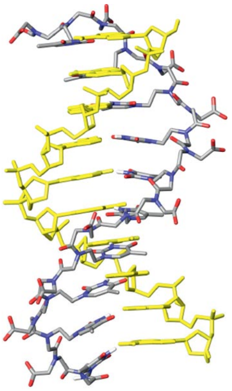
A General Asymmetric Aldol Reaction of Silyl Ketene Acetals Derived from Simple Esters to Aryl α-Keto Esters

Keywords: Aldol reactions / Asymmetric catalysis / Synthetic methods / Keto esters

FULL PAPERS

Peptoid Nucleic Acid

The preparation of a new class of backbone-modified PNA mimetic incorporating thymine is described. The dipeptoid monomer was prepared by a convergent synthesis from properly protected *N*-alkylated glycines. The two oligopeptoid sequences (8-mer and 12-mer), assembled according to standard solid-phase synthesis protocols, show no intersystem cross pairing with complementary strands of nucleic acids.



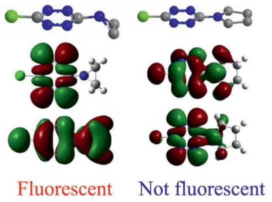
R. Zarra, D. Montesarchio, C. Coppola,
G. Bifulco, S. Di Micco, I. Izzo,*
F. De Riccardis* 6113–6120

Design, Synthesis, and Hybridisation of Water-Soluble, Peptoid Nucleic Acid Oligomers- Tagged with Thymine

Keywords: Peptide nucleic acids / Peptoids / DNA recognition

Fluorescent *s*-Tetrazines

New *s*-tetrazines have been synthesized and their electrochemical and photophysical properties investigated. Their electronic properties were rationalized by DFT calculations affording a predictive tool for the occurrence or not of fluorescence in this class of compounds.



Y.-H. Gong, F. Miomandre,
R. Méallet-Renault, S. Badré, L. Galmiche,
J. Tang, P. Audebert,*
G. Clavier* 6121–6128

Synthesis and Physical Chemistry of *s*-Tetrazines: Which Ones are Fluorescent and Why?

Keywords: Nitrogen heterocycles / Fluorescence / Electrochemistry / Ab initio calculations / Frontier orbitals

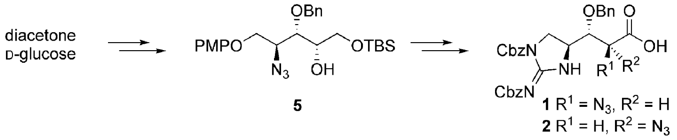
CONTENTS

Amino Acid Synthesis

C. J. Schwörer,
M. Oberthür* 6129–6139

Synthesis of Highly Functionalized Amino Acids: An Expedient Access to L- and D-β-Hydroxyenduracididine Derivatives

Keywords: Amino acids / Antibiotics / Chiral pool / Total synthesis / Nucleophilic substitution



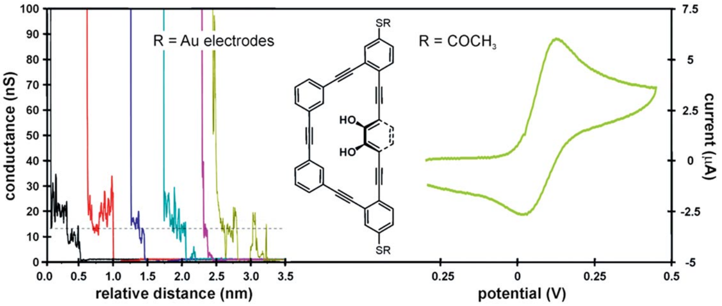
The first synthesis of protected derivatives **1** and **2** of the nonproteinogenic amino acids (3*S*,4*S*)-L- and (3*S*,4*S*)-D-β-hydroxyenduracididine is reported. The two diastereomers were synthesized in a stereodivergent manner, starting from diacetone D-glucose and with alcohol **5** serving as a common intermediate.

Molecular Electronics

N. Weibel, A. Mishchenko,
T. Wandlowski,* M. Neuburger,
Y. Leroux, M. Mayor* 6140–6150

Catechol-Based Macrocyclic Rods: En Route to Redox-Active Molecular Switches

Keywords: Molecular electronics / Macrocycles / Molecular rods / Catechol / Electrochemistry / Single-molecule conductance



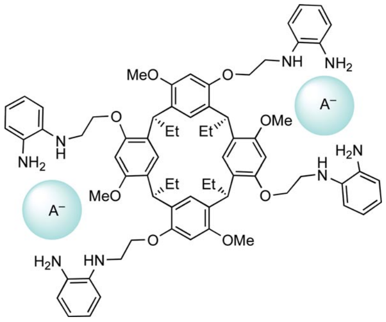
A macrocyclic rod comprising a redox-active subunit has been synthesized and investigated as a potential electrochemically controlled molecular switch based on redox-state-dependent conformational changes. Molecular junctions formed in a STM-based set-up allowed preliminary single-molecule transport investigations.

Neutral Anion Receptor

K. Salorinne, D. P. Weimann,
C. A. Schalley, M. Nissinen* ... 6151–6159

Resorcinarene Podand with Amine-Functionalized Side Arms – Synthesis, Structure, and Binding Properties of a Neutral Anion Receptor

Keywords: Supramolecular chemistry / Host-guest systems / Anions / Receptors / Resorcinarene



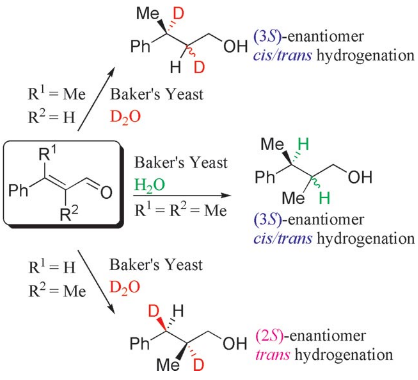
A neutral resorcinarene host bearing four amine-functionalized side arms was found to bind fluoride and acetate anions in solution, whereas in the gas phase, complexes of chloride, formate, nitrate, and tetrafluoroborate anions were detected additionally.

Biohydrogenation

G. Fronza, C. Fuganti,
S. Serra* 6160–6171

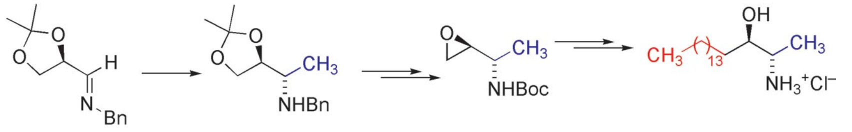
Stereochemical Course of Baker's Yeast Mediated Reduction of the Tri- and Tetrasubstituted Double Bonds of Substituted Cinnamaldehydes

Keywords: Enzyme catalysis / Hydrogenation / Stereoselectivity / Biotransformations / Aldehydes



The stereochemical course of baker's yeast mediated reduction of substituted cinnamaldehydes has been elucidated by a comprehensive study that includes deuterium incorporation and ^{2}H NMR experiments.

Anticancer Agents



The asymmetric synthesis of (2*S*,3*R*)-2-amino-3-octanedecanol hydrochloride from a chiral imine derived from D-glyceraldehyde is reported.

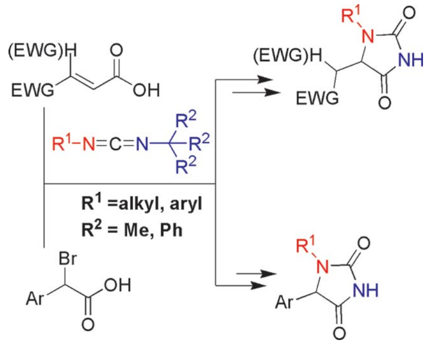
A. C. Allepuz, R. Badorrey,
M. D. Díaz-de-Villegas,*
J. A. Gálvez* 6172–6178

Asymmetric Synthesis of ES-285, an Anticancer Agent Isolated from Marine Sources

Keywords: Asymmetric synthesis / Schiff bases / Sphingosines / Diastereoselectivity / Antitumor agents

Hydantoin Synthesis

A general, straightforward method for the preparation of libraries of 1,5-disubstituted hydantoins in good to excellent yields by a two-step strategy relying on a highly regioselective domino reaction between carbodiimides and suitable carboxylic acids, followed by selective deprotection at the 3-position of the ring is presented.

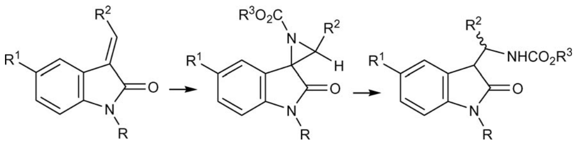


F. Olimpieri, M. C. Bellucci,
A. Volonterio,* M. Zanda* ... 6179–6188

A Mild, Efficient Approach for the Synthesis of 1,5-Disubstituted Hydantoins

Keywords: Domino reactions / Regioselectivity / Nitrogen heterocycles

Spiro-Aziridine Synthesis



NsONHCO$_2$Et-promoted aziridination of 3-ylideneoxindoles in the presence of CaO affords new spiroaziridine-oxindoles. Such potentially bioactive molecules are intermediates on the way to 3-(aminoalkyl)oxindoles.

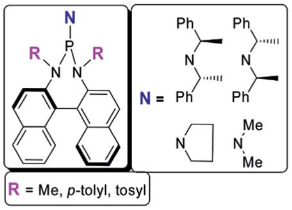
I. Ammetto, T. Gasperi, M. A. Loreto,*
A. Migliorini, F. Palmarelli,
P. A. Tardella 6189–6197

Synthesis of Functionalized Spiroaziridine-oxindoles from 3-Ylideneoxindoles: An Easy Route to 3-(Aminoalkyl)oxindoles

Keywords: Aziridination / Spiro compounds / Nitrogen heterocycles

Chiral Phosphorus Ligands

Chiral phosphorous triamide (PTA) ligands based on 1,1′-binaphthyl-2,2′-diamine with different steric and electronic properties have been synthesised and their structures compared with the corresponding phosphoramidites. The PTAs exhibited good activities and chemoselectivities and moderate enantioselectivities in Ni-catalysed hydrovinylation and Cu-catalysed Michael addition reactions.



K. Barta, M. Eggenstein, M. Hölscher,
G. Franciò,* W. Leitner* 6198–6204

1,1′-Binaphthyl-2,2′-diamine-Based Chiral Phosphorous Triamides: Synthesis and Applica-tion in Asymmetric Catalysis

Keywords: P-ligands / Asymmetric catalysis / Hydrovinylation / Michael addition / Phosphoramidites

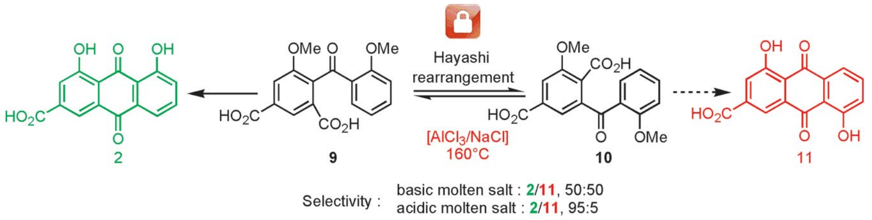
CONTENTS

Natural Product Synthesis

V. Gonnot, C. Antheaume, M. Nicolas, C. Mioskowski, R. Baati* 6205–6210

Highly Selective Three-Step Synthesis of Rhein in Chloroaluminate Molten Salt: Preclusion of the Hayashi Rearrangement

Keywords: Regioselectivity / Natural products / Molten salts / Ionic liquids / Rearrangement



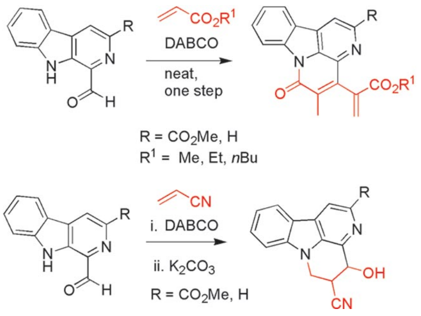
The Hayashi rearrangement of keto-carboxylic acid **9** in acidic chloroaluminate inorganic liquid was precluded, which allowed the expedient total synthesis of natural rhein with high selectivity. This effect is ascribed to the presence of noncoordinating, strong Lewis acid species, which dramatically increase the rate of the direct cyclization step by avoiding the competitive rearrangement.

Canthinones and Canthines

V. Singh, S. Hutait, S. Batra* ... 6211–6216

Baylis–Hillman Reaction of 1-Formyl-β-carboline: One-Step Synthesis of the Canthin-6-one Framework by an Unprecedented Cascade Cyclization Reaction

Keywords: Natural products / Cyclization / Synthetic methods / Nitrogen heterocycles / Polycycles



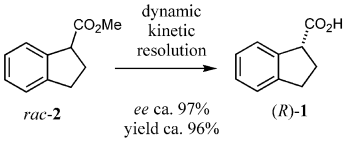
A new route to the synthesis of unnatural substituted canthine-6-ones and canthines by the Baylis–Hillman reaction of substituted 1-formyl-β-carbolines is presented.

Dynamic Kinetic Resolution

J. Pietruszka,* R. C. Simon, F. Kruska, M. Braun 6217–6224

Dynamic Enzymatic Kinetic Resolution of Methyl 2,3-Dihydro-1*H*-indene-1-carboxylate

Keywords: Hydrolases / Enzyme catalysis / Racemisation / Kinetic resolution / Domino reactions



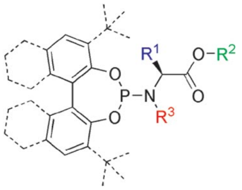
A synthesis of the enantiomerically pure compound (*R*)-**1** by dynamic enzymatic kinetic resolution with a hydrolase (CAL-B) and a base (TBD) was established. For the first time it was demonstrated that the corresponding ester (*R*)-**2** can be successfully used without any detectable racemisation in a consecutive domino reaction directed towards novel biaryl peptidyl-prolyl-*cis*/*trans*-isomerase inhibitors.

Asymmetric Catalysis

P.-A. R. Breuil, J. N. H. Reek*... 6225–6230

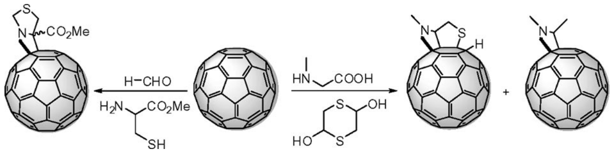
Amino Acid Based Phosphoramidite Ligands for the Rhodium-Catalyzed Asymmetric Hydrogenation

Keywords: Asymmetric catalysis / Hydrogenation / Homogeneous catalysis / Phosphoramidite / Rhodium



Various amino acid based phosphoramidite ligands have been prepared and evaluated in rhodium-catalyzed asymmetric hydrogenation. Modifications at three positions strongly affect the catalytic outcome. The ability of amino acid to steer the enantioselectivity is demonstrated by using the flexible *tropos* backbone.

Fused Fullerenes



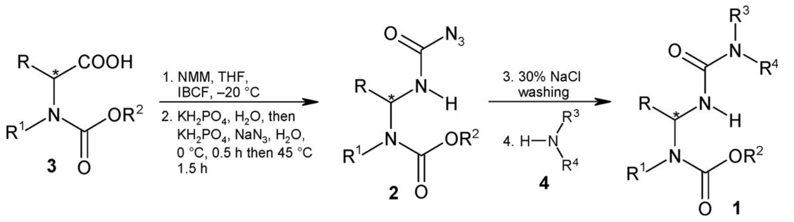
With appropriate reagents, thiols react regioselectively with C_{60} to form a fused tetrahydrothiophene ring by nucleophilic addition. However, a thiazolidine-containing fullerene is obtained when cysteine or cystine react with HCHO and C_{60}. Theoretical calculations predict that the activation barrier to the formation of the tetrahydrothiophene ring is higher than that of the related oxygen analogue.

M. Izquierdo, S. Osuna, S. Filippone, A. Martín-Domenech, M. Solà,* N. Martín* 6231–6238

On the Regioselective Intramolecular Nucleophilic Addition of Thiols to C_{60} 💻

Keywords: Fullerenes / Nucleophilic addition / Thiols / Cyclization / Heterocycles

Unsymmetrically Substituted Ureas



An efficient two-step synthesis of unsymmetrically substituted ureas starting from the carbamoyl azides of α-*N*-protected amino acids is described. These intermediates are useful chiral building blocks in the synthesis of ureido compounds containing a 1,1-diaminoalkyl residue.

G. Verardo,* E. Bombardella, C. D. Venneri, P. Strazzolini ... 6239–6244

A Convenient Synthesis of Unsymmetrically Substituted Ureas via Carbamoyl Azides of α-*N*-Protected Amino Acids 💻

Keywords: Azides / Amino acids / Amines / Synthetic methods

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* Author to whom correspondence should be addressed.

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