

Organic & Biomolecular Chemistry

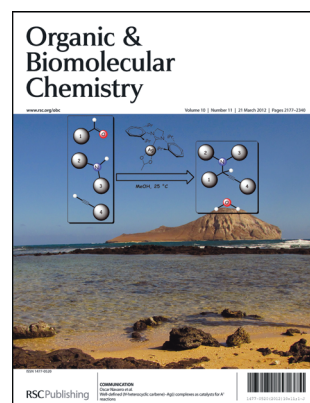
An international journal of synthetic, physical and biomolecular organic chemistry

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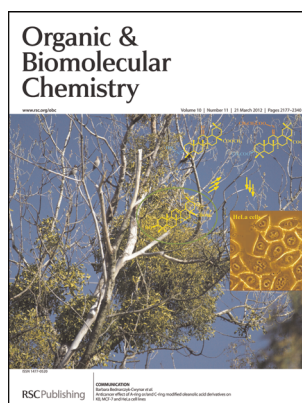
ISSN 1477-0520 CODEN OBCRAK 10(11) 2177–2340 (2012)



Cover

See Chen *et al.*,
pp. 2206–2208.

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Biomol. Chem.*, 2012, **10**, 2206.



Inside cover

See Bednarczyk-Cwynar *et al.*,
pp. 2201–2205.

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10, 2201.

Mistletoe is a source of valuable
natural anticancer compounds.

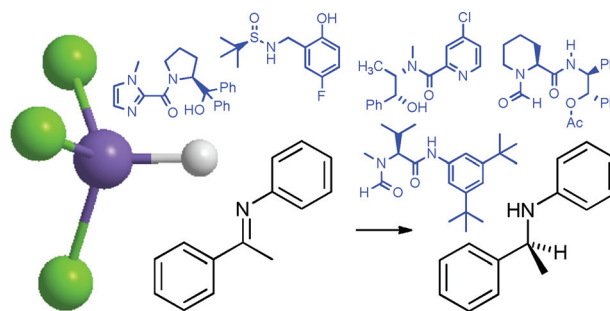
PERSPECTIVE

2189

Trichlorosilane mediated asymmetric reductions of the C=N bond

Simon Jones* and Christopher J. A. Warner

Lewis base activated trichlorosilane mediated reduction of ketimines offers significant advantages as an alternative method for the synthesis of chiral amine building blocks.



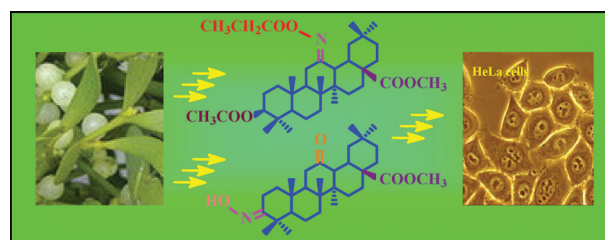
COMMUNICATIONS

2201

Anticancer effect of A-ring or/and C-ring modified oleanolic acid derivatives on KB, MCF-7 and HeLa cell lines

Barbara Bednarczyk-Cwynar,* Lucjusz Zaprutko,
Piotr Ruskowski and Bogusław Hładon

New A-ring or/and C-ring modified methyl oleanolate derivatives were prepared and their strong cytotoxic activity on KB, MCF-7 and HeLa cell lines was established.



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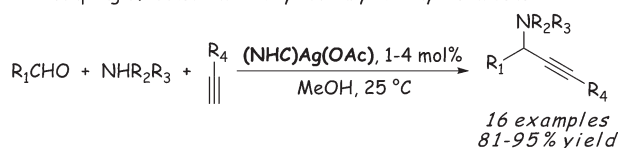
2206

Well-defined (*N*-heterocyclic carbene)–Ag(I) complexes as catalysts for A³ reactions

Ming-Tsz Chen, Brant Landers and Oscar Navarro*

The use of well-defined (*N*-heterocyclic carbene)–Ag(I) complexes for the A³ reaction allows for the coupling of unactivated aldehydes at room temperature and very short reaction times.

- A³ coupling of unactivated alkyl and aryl aldehydes at r. t. :

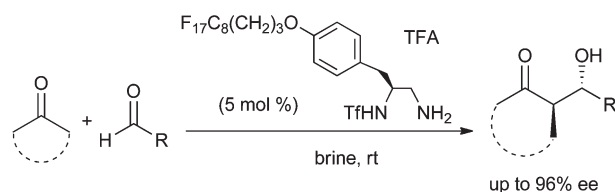


2209

Highly efficient asymmetric aldol reaction in brine using a fluorosulfonamide organocatalyst

Tsuyoshi Miura,* Hikaru Kasuga, Kie Imai, Mariko Ina, Norihiro Tada, Nobuyuki Imai and Akichika Itoh

A fluorosulfonamide organocatalyst promotes direct asymmetric aldol reactions of aromatic aldehydes with ketones in brine to afford the corresponding *anti*-aldol products in high yield with up to 96% ee.

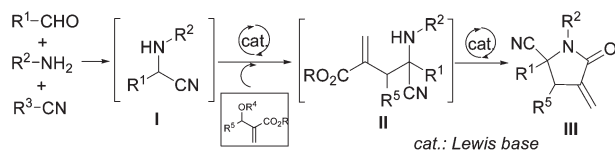


2214

Construction of highly functional α -amino nitriles via a novel multicomponent tandem organocatalytic reaction: a facile access to α -methylene γ -lactams

Feng Pan, Jian-Ming Chen, Zhe Zhuang, Yin-Zhi Fang, Sean Xiao-An Zhang and Wei-Wei Liao*

The first tertiary amine-catalyzed multicomponent tandem Strecker–allylic-alkylation (SAA) reaction has been developed, which provides a facile access to functionalized α -amino nitriles, which could be readily converted into α -methylene- γ -butyrolactams.

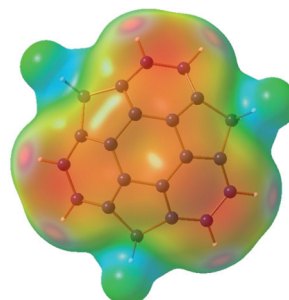


2218

Experimental electron density of sumanene, a bowl-shaped fullerene fragment; comparison with the related corannulene hydrocarbon

Stefan Mebs,* Manuela Weber, Peter Luger, Bernd M. Schmidt, Hidehiro Sakurai, Shuhei Higashibayashi, Satoru Onogi and Dieter Lentz*

The π -stacking in the solid state of the bowl-shaped hydrocarbon sumanene finds its explanation in the ESP (electrostatic potential).



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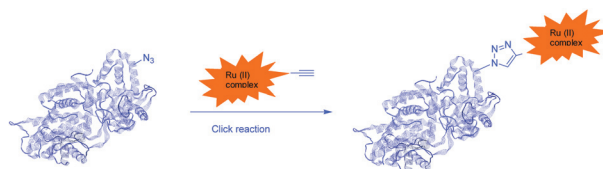
COMMUNICATIONS

2223

Site specific chemoselective labelling of proteins with robust and highly sensitive Ru(II) bathophenanthroline complexes

Matthew C. Uzagare, Iris Claußnitzer, Michael Gerrits and Willi Bannwarth*

The bioorthogonal and chemoselective fluorescence labelling of several cell-free synthesized proteins containing a site-specifically incorporated azido amino acid using extremely robust, photo-stable and highly sensitive alkyne-functionalized Ru(II) bathophenanthroline complexes was achieved *via* a click reaction.

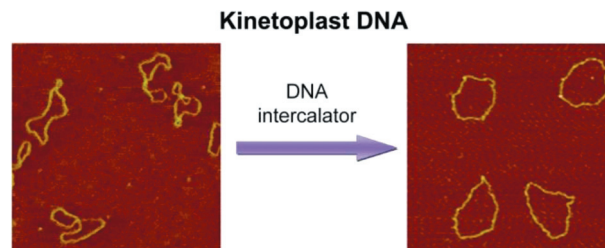


2227

Interference of intrinsic curvature of DNA by DNA-intercalating agents

Hong Kee Tan, Dawei Li, Robert Kenneth Gray, Zhaoqi Yang, Magdeline Tao Ng, Hao Zhang, Joel Ming Rui Tan, Shu Hui Hiew, Jasmine Yiqin Lee and Tianhu Li*

Interferences of intrinsic curvature of DNA by DNA intercalators were clearly identifiable through our atomic force microscopic examination.



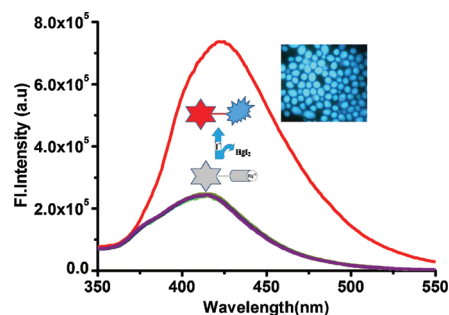
PAPERS

2231

Carbazole–thiosemicarbazone–Hg(II) ensemble-based colorimetric and fluorescence turn-on toward iodide in aqueous media and its application in live cell imaging

Ajit Kumar Mahapatra,* Jagannath Roy, Prithidipa Sahoo, Subhra Kanti Mukhopadhyay and Amarnath Chattopadhyay

A carbazole–thiosemicarbazone–Hg²⁺ ensemble-based fluorogenic probe for detection of iodide in aqueous media is reported. The practical use of an ‘ensemble’ was demonstrated by its application to the detection of iodide in the living cells.

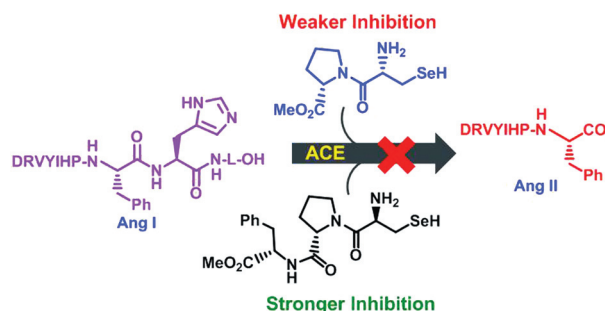


2237

Antioxidant activity of peptide-based angiotensin converting enzyme inhibitors

Bhaskar J. Bhuyan and Govindasamy Mugesh*

It is shown that there is a phenylalanine binding pocket at the angiotensin converting enzyme (ACE) active site. Sec–Pro–Phe tripeptides are better inhibitors of ACE as compared to the Sec–Pro dipeptides. The importance of the sequence of amino acid residues in ACE inhibition is also described. Selenocysteine-based ACE inhibitors can be beneficial for the treatment of hypertension as they are found to possess antioxidant properties.



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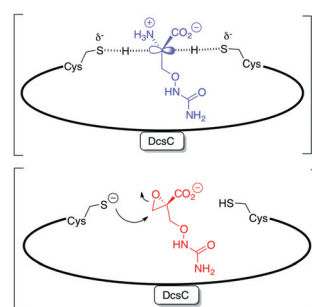
PAPERS

2248

Characterization of DcsC, a PLP-independent racemase involved in the biosynthesis of D-cycloserine

David Dietrich, Marco J. van Belkum and John C. Vederas*

We show that DcsC is a PLP-independent racemase that acts on *O*-ureidoserine. It is inhibited by cysteine-inactivating reagents such as Hg²⁺, iodoacetamide, and a substrate analogue bearing an epoxide.

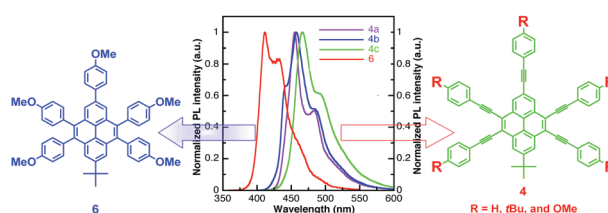


2255

Highly emissive hand-shaped π -conjugated alkylnylpyrenes: Synthesis, structures, and photophysical properties

Jian-Yong Hu,* Xin-Long Ni, Xing Feng, Masanao Era, Mark R. J. Elsegood, Simon J. Teat and Takehiko Yamato*

Three hand-shaped, highly fluorescent and stable alkylnylpyrenes were successfully designed and synthesized, which are promising candidates in OLED-like optoelectronic devices.

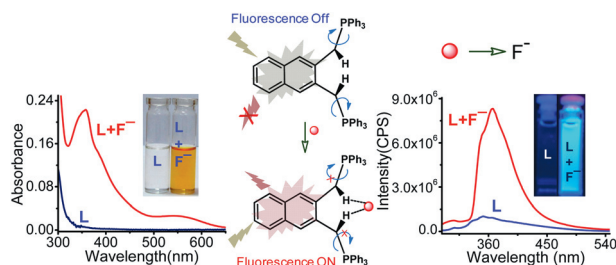


2263

An alternative approach: a highly selective dual responding fluoride sensor having active methylene group as binding site

Priyadip Das, Manoj K. Kesharwani, Amal K. Mandal, Eringathodi Suresh, Bishwajit Ganguly* and Amitava Das*

Active methylene functionality acts as a new binding motif for anions. This reagent is ideally suited as a specific chromogenic sensor for recognition of F⁻ among all other competitive anions including CN⁻, H₂PO₄⁻ and CH₃CO₂⁻. Hydrogen bond formation is the main binding force, however an excess aliquot of F⁻ triggers deprotonation.

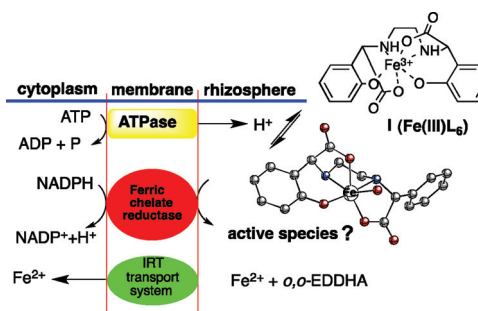


2272

Biological activity of Fe(III) aquo-complexes towards ferric chelate reductase (FCR)

Rosa Escudero, Mar Gómez-Gallego,* Santiago Romano, Israel Fernández, Ángel Gutiérrez-Alonso, Miguel A. Sierra,* Sandra López-Rayó, Paloma Nadal and Juan J. Lucena

Fe(III)-aquo complexes derived from phenol polyaminocarboxylic acids are highly efficient towards the enzyme ferric chelate reductase (FCR) and show interesting structure-activity properties in the enzymatic reduction process.



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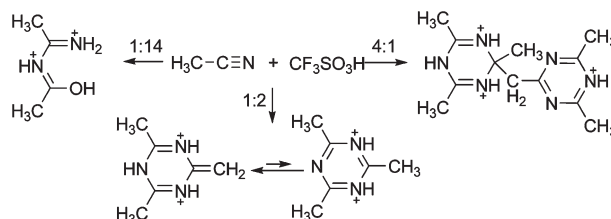
PAPERS

2282

Interaction of acetonitrile with trifluoromethanesulfonic acid: unexpected formation of a wide variety of structures

George E. Salnikov, Alexander M. Genaev,* Vladimir G. Vasiliev and Vyacheslav G. Shubin

Interaction of the two simple compounds, CH₃CN and TfOH, results in formation of a variety of complicated structures, the composition of the reaction products being a function of the ratio of CH₃CN to TfOH.

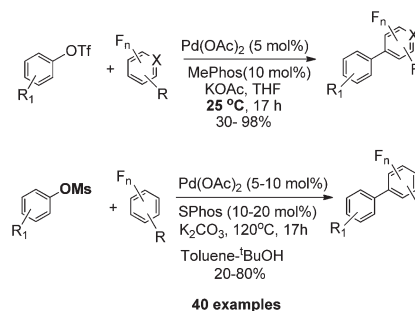


2289

Scope of direct arylation of fluorinated aromatics with aryl sulfonates

Joyce Wei Wei Chang, Eugene Yurong Chia, Christina Li Lin Chai and Jayasree Seayad*

A general Pd catalyzed methodology for the direct arylation of electron deficient arenes with aryl triflates and mesylates is demonstrated.

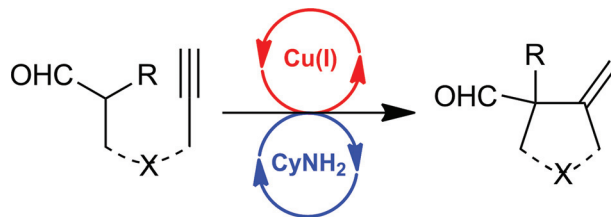


2300

Copper(I)-amine metallo-organocatalyzed synthesis of carbo- and heterocyclic systems

Benjamin Montaignac, Victor Östlund, Maxime R. Vitale, Virginie Ratovelomanana-Vidal* and Véronique Michelet*

The efficient and atom economical synthesis of 5-membered cyclic structures is achieved through the combination of aminocatalysis and metal catalysis (30 examples 51–96% yield including cyclopentanes, indanes, pyrrolidines and tetrahydrofuran).

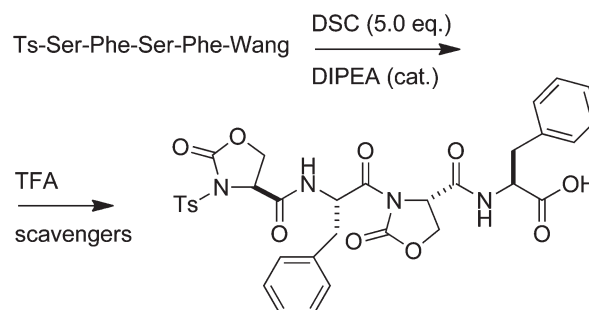


2307

Expedient synthesis of pseudo-Pro-containing peptides: towards constrained peptidomimetics and foldamers

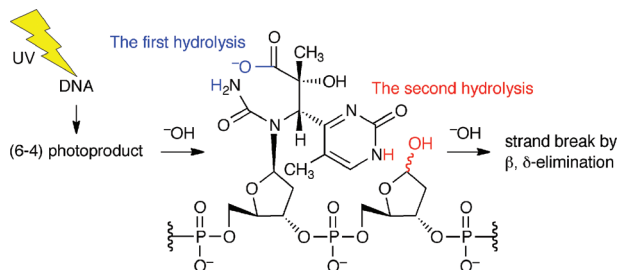
Rossella De Marco, Alessandra Tolomelli, Marilena Campitiello, Pasqualina Rubini and Luca Gentilucci*

The reaction of sulfonyl peptides containing L- or D-configured Ser or Thr with bis(succinimidyl) carbonate in the presence of a catalytic amount of a base affords, in solution or in the solid phase, the corresponding peptides with one or two, consecutive or alternate oxazolidin-2-ones (Oxd).



PAPERS

2318

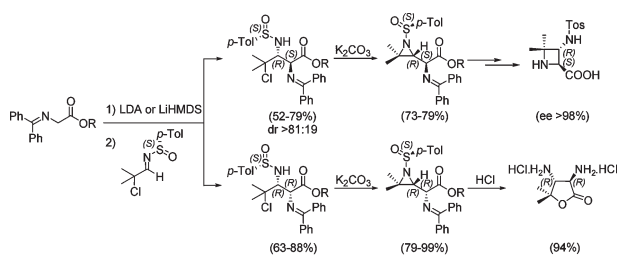


Mechanism of the alkali degradation of (6-4) photoproduct-containing DNA

Norihito Arichi, Aki Inase, Sachise Eto, Toshimi Mizukoshi, Junpei Yamamoto and Shigenori Iwai*

The mechanism of the alkali-induced strand breaks caused at the (6-4) photoproduct sites in UV-irradiated DNA was elucidated.

2326



Asymmetric synthesis of α,β -diamino acid derivatives with an aziridine-, azetidine- and γ -lactone-skeleton via Mannich-type additions across α -chloro- N -sulfinylimines

Gert Callebaut, Sven Mangelinckx, Loránd Kiss, Reijo Sillanpää, Ferenc Fülöp and Norbert De Kimpe*

New chiral *syn*- and *anti*- γ -chloro- α,β -diamino esters are formed in high yield and in excellent diastereomeric ratios *via* stereoselective Mannich-type reactions of N -(diphenylmethylene) glycine esters across a chiral α -chloro- N -*p*-toluenesulfinylimine.

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