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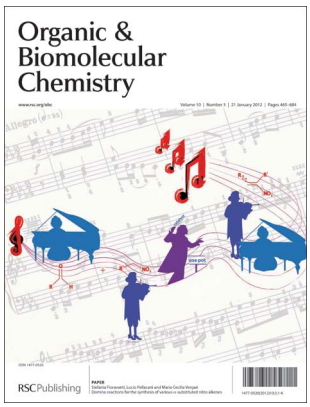
ISSN 1477-0520 CODEN OBCRAK 10(3) 465–684 (2012)



Cover

See Lucio Pellacani *et al.*, pp. 524–528.

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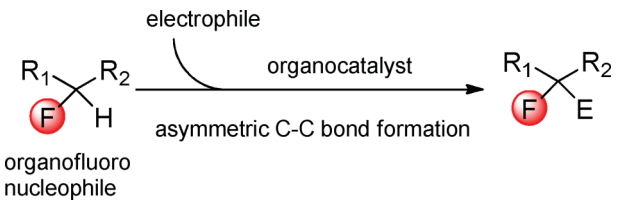
PERSPECTIVE

Enantioselective organocatalytic fluorination using organofluoro nucleophiles

Yujun Zhao, Yuanhang Pan, Sui-Boon Derek Sim and Choon-Hong Tan*

While methods of electrophilic fluorination have been extensively developed to stereoselectively install fluorine atoms onto molecules, nucleophilic fluorination is a much less explored approach. In this review, recent advances in the application of organofluoro nucleophiles in organocatalysis are summarised.

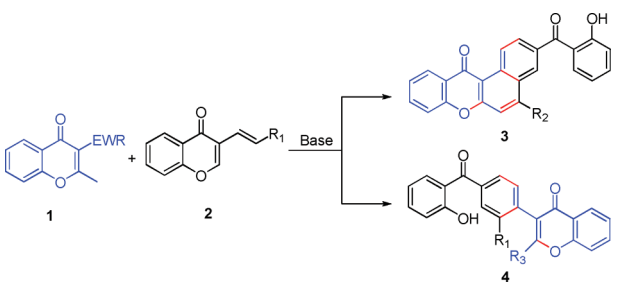


COMMUNICATIONS

Domino reactions of 2-methyl chromones containing an electron withdrawing group with chromone-fused dienes

Jian Gong, Fuchun Xie, Wenming Ren, Hong Chen and Youhong Hu*

These mild tandem reactions provide efficient access to functionalized benzo[*a*]xanthones and novel chromone derivatives.



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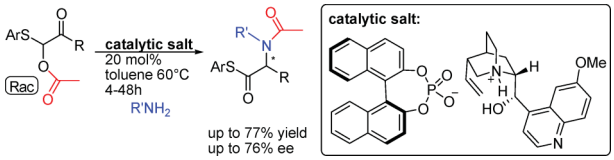
Organocatalytic asymmetric tandem condensation–intramolecular rearrangement–protonation: an approach to optically active α-amino thioester derivatives

Francesca Capitta, Angelo Frongia,* Pier Paolo Piras, Patrizia Pitzanti and Francesco Secci

A conceptually novel chiral Brønsted base/Brønsted acid catalytic method for the enantioselective synthesis of α-amino thioesters through a tandem condensation–intramolecular rearrangement–protonation has been developed which provides a number of important synthetic building blocks in good yield and with moderate to good enantioselectivities.



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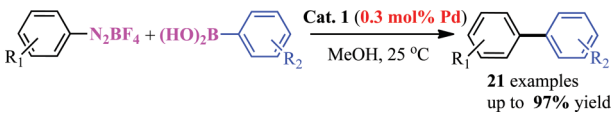
Suzuki–Miyaura cross-couplings of arenediazonium tetrafluoroborate salts with arylboronic acids catalyzed by aluminium hydroxide-supported palladium nanoparticles

Xing Li,* Xu-Ying Yan, Hong-Hong Chang,* Li-Chao Wang, Yan Zhang, Wen-Wen Chen, Yan-Wei Li and Wen-Long Wei

Suzuki–Miyaura cross-couplings of arenediazonium salts with arylboronic acids catalyzed by highly active aluminium hydroxide-supported palladium nanoparticles catalyst have been investigated for the first time.



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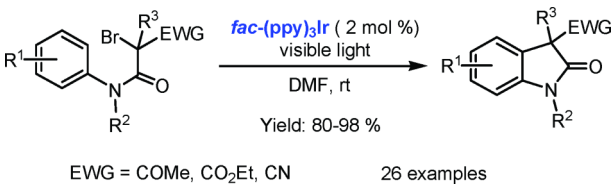
Synthesis of oxindoles *via* visible light photoredox catalysis

Xuhui Ju, Yan Liang, Pingjing Jia, Weifei Li and Wei Yu*

fac-Ir(ppy)$_3$-catalyzed cyclisation of 2-EWG-substituted 2-bromoanilides under visible light irradiation constitutes an efficient synthesis of the 3,3-disubstituted oxindoles.



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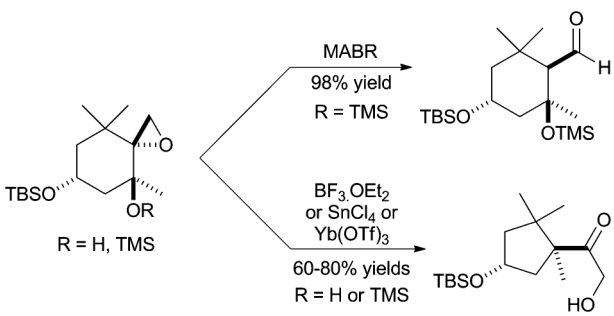
Tandem Payne/Meinwald *versus* Meinwald rearrangements on the α-hydroxy- or α-silyloxy-spiro epoxide skeleton

Jane Totobenazara, Heloua Haroun, Julien Rémond, Karim Adil, Fabrice Dénès, Jacques Lebreton, Catherine Gaulon-Nourry* and Pascal Gosselin*

Original new α-silyloxy-spiro epoxides rearrange according to either a Payne/Meinwald (*e.g.*, with $SnCl_4$) or a Meinwald (with MABR) rearrangement.



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COMMUNICATIONS

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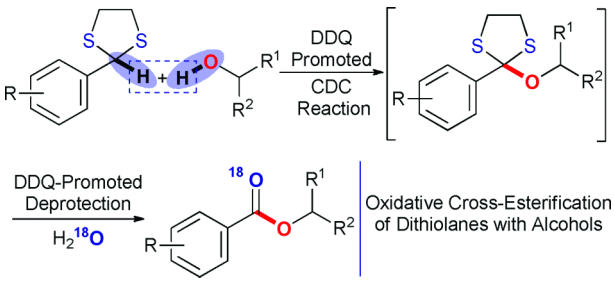
Oxidative cross-esterification of dithiolanes with alcohols through a cross-dehydrogenative coupling (CDC)/deprotection sequence

Liang Fu, Chang-Jiang Yao, Ning-Jie Chang, Jia-Rong Chen, Liang-Qiu Lu* and Wen-Jing Xiao*

An unprecedented oxidative cross-esterification in an equimolar mixture of dithiolanes, alcohols and water through a CDC/deprotection sequence has been developed. The reaction itself features simple experimental procedures under mild conditions and offers a new strategic protocol for the efficient synthesis of structurally diverse esters.



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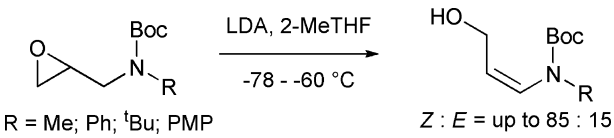
***E*- and *Z*-Stereoselectivity in the preparation of enamides from glycidyl sulfonamides and carbamates**

Jack A. Brown, Vijay Chudasama, Melvyn E. Giles, Duncan M. Gill,* Philip S. Keegan, William J. Kerr, Rachel H. Munday, Karen Griffin and Andrew Watts

Treatment of glycidyl sulfonamides with LDA delivers the anticipated enesulfonamide with good *E*-isomer selectivity, whereas the corresponding carbamates exhibit selectivity for the *Z*-enecarbamate. An E1cB elimination mechanism *via* substrate–base chelate complex is advanced as rationalisation of the *Z*-selective outcomes.



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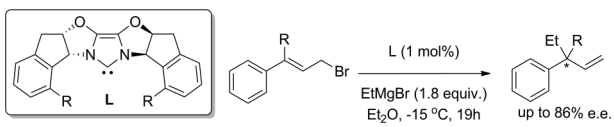
The design and synthesis of novel IBiox N-heterocyclic carbene ligands derived from substituted amino-indanols

Jean-Noël Levy, Christopher M. Latham, Loïc Roisin, Nadine Kandziora, Paolo Di Fruscia, Andrew J. P. White, Simon Woodward and Matthew J. Fuchter*

A synthetic route towards novel IBiox N-heterocyclic carbene (NHC) ligands has been developed. The ligands have restricted flexibility and high steric demand, and preliminary studies show they give high levels of asymmetric induction in the copper-free allylic alkylation of cinnamyl bromide.



PAPERS

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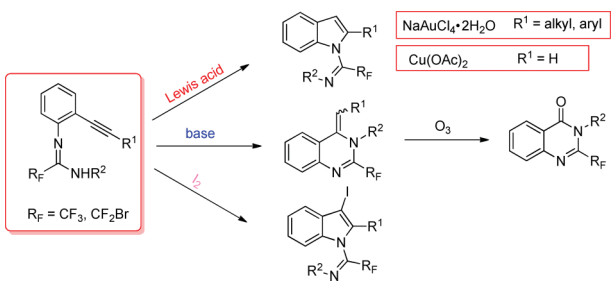
A detailed study of the intramolecular hydroamination of *N*-(*ortho*-alkynyl)aryl-*N′*-substituted trifluoroacetamidines and bromodifluoroacetamidines

Jiangtao Zhu, Haibo Xie, Zixian Chen, Shan Li and Yongming Wu*

The intramolecular hydroamination of fluorinated (*ortho*-alkynylaryl)amidines under Lewis acid, base and iodine occurred in different ways, constructing different fluorinated azaheterocyles.



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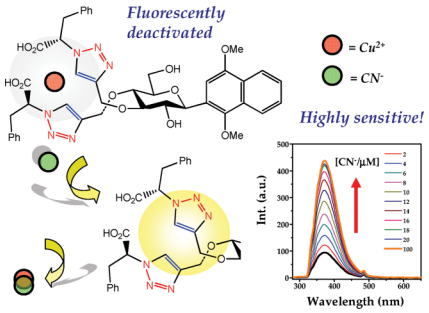
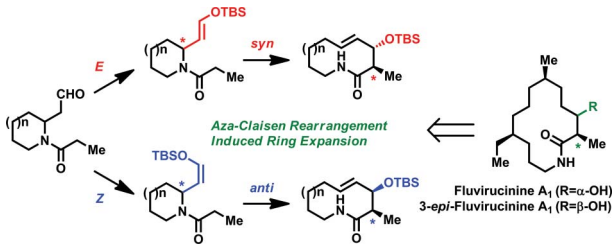


Discovery of a sensitive Cu(II)-cyanide "off–on" sensor based on new *C*-glycosyl triazolyl bis-amino acid scaffold

Yan-Hui Tang, Yi Qu, Zhuo Song, Xiao-Peng He,* Juan Xie, Jianli Hua* and Guo-Rong Chen*

A unique triazolyl peptidomimetic–Cu(II) complex is developed as a satisfactorily sensitive "off–on" fluorescent chemosensor for cyanide.

561



A stereo-controlled access to functionalized macrolactams *via* an aza-Claisen rearrangement

Young-Ger Suh,* Yong-Sil Lee, Seok-Ho Kim, Jae-Kyung Jung, Hwayoung Yun, Jaebong Jang, Nam-Jung Kim and Jong-Wha Jung*

A novel and stereo-controlled method that offers an attractive alternative to the intramolecular amide–aldol reaction for the elaboration of β-alkoxy-α-substituted motifs has been developed.

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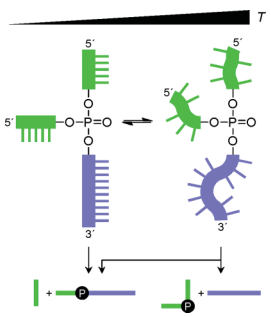
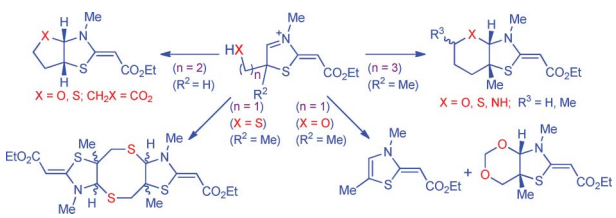


Impact of steric constraints on the product distribution of phosphate-branched oligonucleotide models of the large ribozymes

Tuomas Lönnberg* and Kirsi-Maria Kero

Product distribution of the hydrolysis of phosphate-branched oligonucleotides is temperature-dependent, suggesting a major role for steric constraints in catalysis by the large ribozymes.

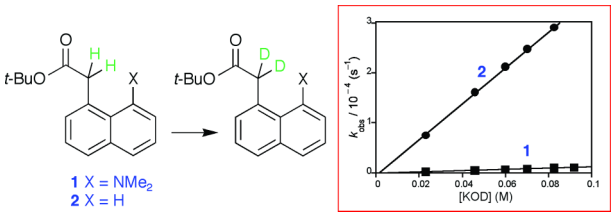
575

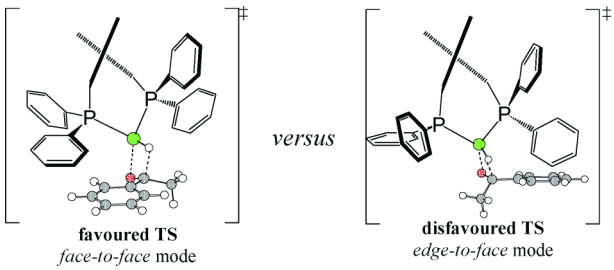


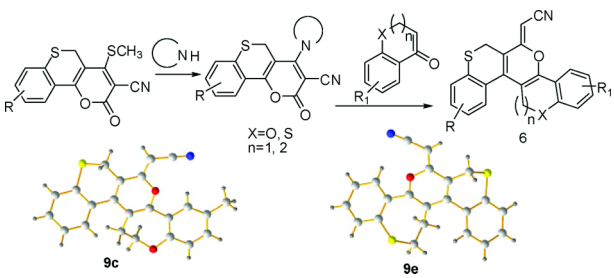
Synthesis of thiazolidine-fused heterocycles *via exo*-mode cyclizations of vinylogous *N*-acyliminium ions

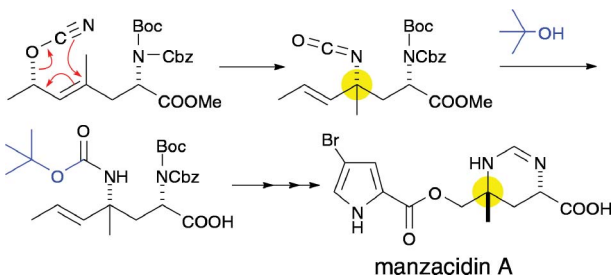
Milovan Stojanović, Rade Marković, Erich Kleinpeter and Marija Baranac-Stojanović*

Syntheses of thiazolidine-fused heterocycles *via exo*-mode cyclizations of vinylogous *N*-acyliminium ions incorporating heteroatom-based nucleophiles have been examined and discussed. The reaction outcome and stereochemistry are rationalized using quantum chemical calculations.









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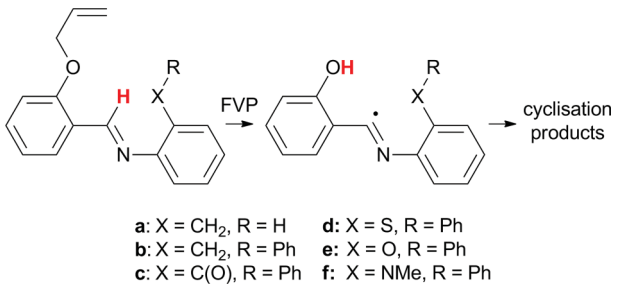

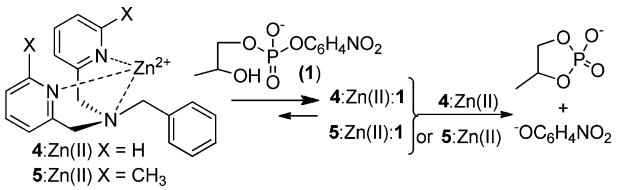

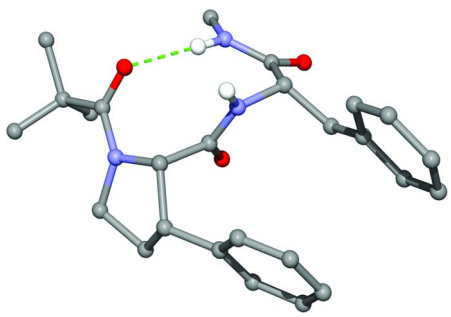

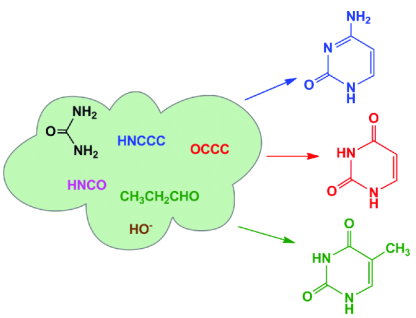

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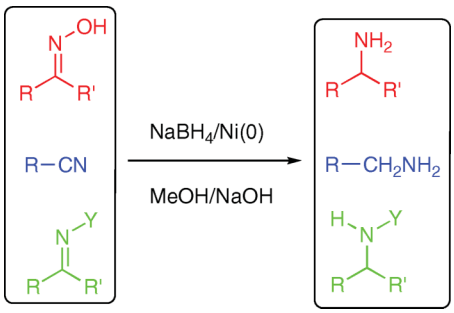

Enhanced reduction of C–N multiple bonds using sodium borohydride and an amorphous nickel catalyst

Shouxin Liu,* Yihua Yang, Xiaoli Zhen, Junzhang Li, Huimin He, Juan Feng and Andrew Whiting*

An amorphous nickel powder (Ni^0) catalyst enhances $NaBH_4$ reduction C–N multiple bonds, including oximes, imines, hydrazones and nitriles to produce the amines in good to excellent yields.

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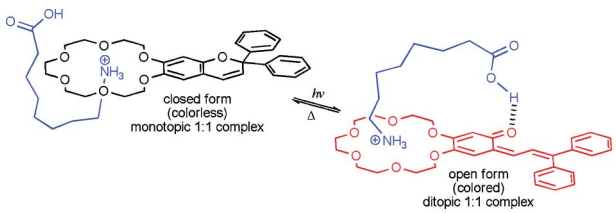

Mono- and ditopic models of binding of a photochromic chromene annelated with an 18-crown-6 ether with protonated amino acids

Sergey Paramonov,* Yury Fedorov, Vladimir Lokshin, Elena Tulyakova, Gaston Vermeersch, Stéphanie Delbaere and Olga Fedorova

The initial and photoinduced forms of a chromene annelated with an 18-crown-6 ether form different complexes with protonated amino acids.

