Organic & Biomolecular Chemistry

An international journal of synthetic, physical and biomolecular organic chemistry

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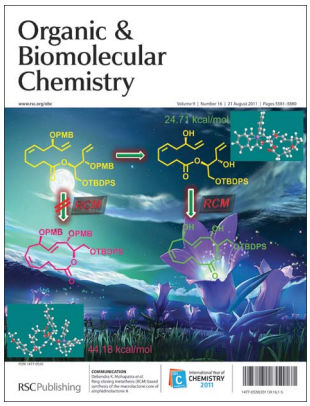
IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 9(16) 5581–5880 (2011)



Cover

See Debendra K. Mohapatra *et al.*, pp. 5630–5632.

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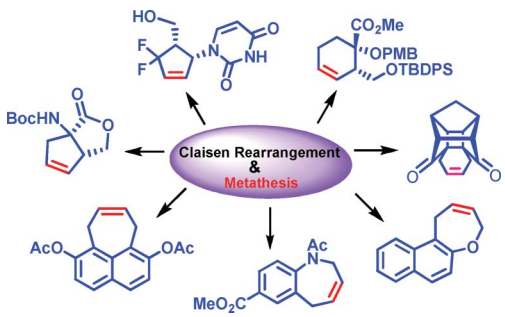
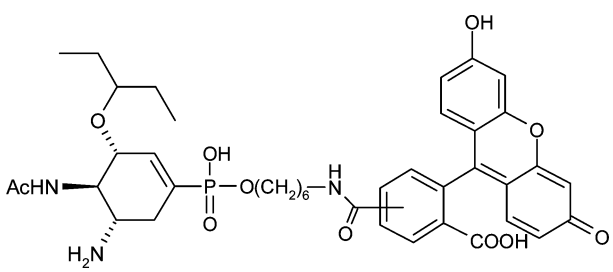
PERSPECTIVE



COMMUNICATIONS



K_i = 0.162 nM (for influenza virus X31(H3N2) neuraminidase)

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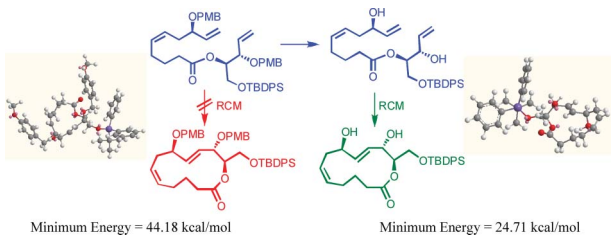
5630

Ring-closing metathesis (RCM) based synthesis of the macrolactone core of amphidinolactone A

Debendra K. Mohapatra,* Manas R. Pattanayak, Pragna P. Das, Tapas R. Pradhan and J. S. Yadav*

A convergent synthesis of the macrolactone core of amphidinolactone A has been achieved in a 10 step linear sequence with 32% overall yield, through ring-closing metathesis as the macrolactonization step.

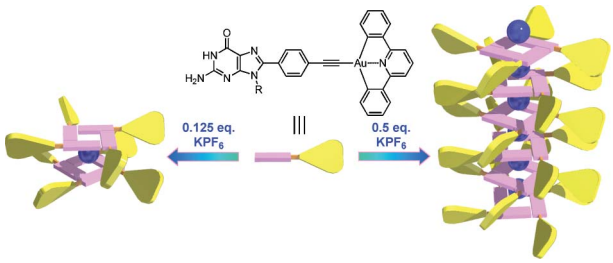


5633

Synthesis and assembling properties of bioorganometallic cyclometalated Au(III) alkynyls bearing guanosine moieties

Xiangtai Meng, Toshiyuki Moriuchi,* Norimitsu Tohnai, Mikiji Miyata, Masatoshi Kawahata, Kentaro Yamaguchi and Toshikazu Hirao*

The guanosine-based Au(III) compound was demonstrated to serve as a versatile bioorganometallic conjugate, which could form a variety of aggregates in the absence and presence of KPF_6 *via* self-assembly of the guanosine moiety.

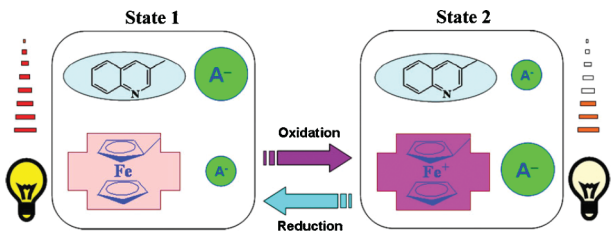


5637

Redox-driven sulfate ion transfer between two tripodal tris(urea) receptors

Minrui Li, Yongjing Hao, Biao Wu,* Chuandong Jia, Xiaojuan Huang and Xiao-Juan Yang*

Two receptors with the same scaffold but different signaling groups were employed to control intermolecular anion transfer *via* an electrochemical stimulus.

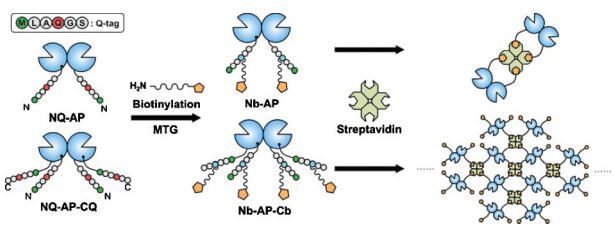


5641

Protein assemblies by site-specific avidin–biotin interactions

Yutaro Mori, Kosuke Minamihata, Hiroki Abe, Masahiro Goto and Noriho Kamiya*

The potential use of site-specific ligand labeling of protein building blocks is assessed in designing functional protein supramolecular complexes.



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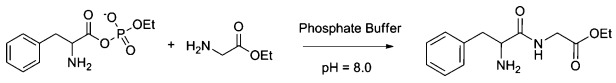
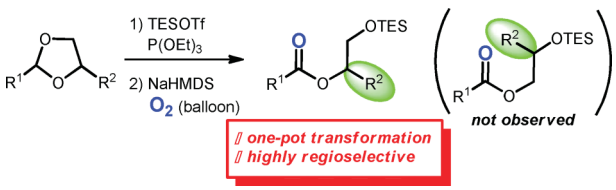


Biomimetic peptide bond formation in water with aminoacyl phosphate esters

Raj S. Dhiman, Liliana Guevara Opinska and Ronald Kluger*

Aminoacyl phosphates react efficiently with amino acid esters to form dipeptides with retention of stereochemical integrity; the reactions are selective and occur readily in the presence of nucleophiles other than amino groups on their side chains.

5648

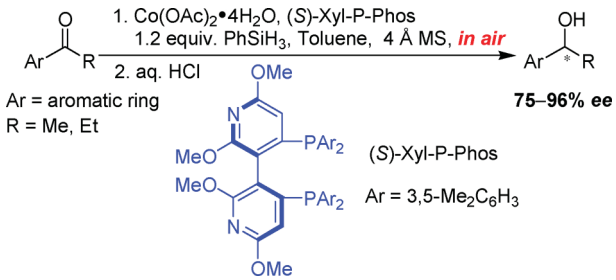


Direct conversion of acetals to esters with high regioselectivity *via* *O*,*P*-acetals

Tomohiro Maegawa, Kazuki Otake, Akihiro Goto and Hiromichi Fujioka*

A direct transformation of *O*,*O*-acetals to esters *via* *O*,*P*-acetals, which is applicable to unsymmetrical *O*,*O*-acetals to give the single regioisomer.

5652

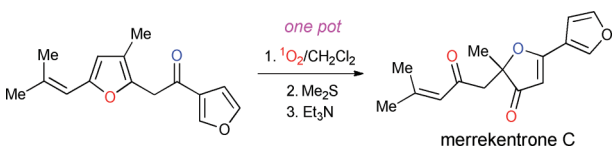


Cobalt(II)-catalyzed asymmetric hydrosilylation of simple ketones using dipyridylphosphine ligands in air

Feng Yu, Xi-Chang Zhang, Fei-Fei Wu, Ji-Ning Zhou, Wenjun Fang, Jing Wu* and Albert S. C. Chan*

Cobalt–dipyridylphosphine-catalyzed asymmetric hydrosilylation of a diverse range of aryl alkyl ketones afforded alcohols with moderate-to-excellent enantioselectivities (up to 96% ee) in air.

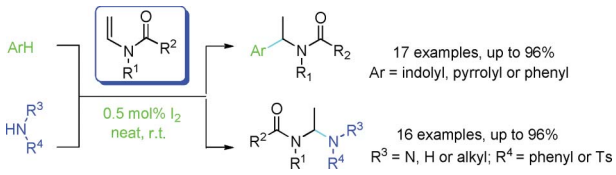
5655



Functionalized 3(2*H*)-furanones *via* photooxygenation of (β-keto)-2-substituted furans: Application to the biomimetic synthesis of merrekentrone C

Charis Gryparis, Ioannis N. Lykakis, Christina Efe, Ioannis-Panayotis Zaravinos, Theonymphi Vidali, Eugenia Kladou and Manolis Stratakis*

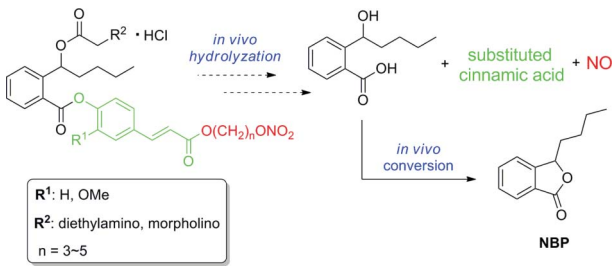
Photooxygenation of (β-keto)-2-substituted furans leads, in a one pot operation, to functionalized 3(2*H*)-furanones with good to excellent yields. This method was applied to the synthesis of merrekentrone C.



Direct alkylation of indoles and amines by *tert*-enamides: facile access to pharmaceutically active 2-oxo-1-pyrrolidine analogues

Ran Jiang, Hai-Yan Xu, Xiao-Ping Xu,* Xue-Qiang Chu and Shun-Jun Ji*

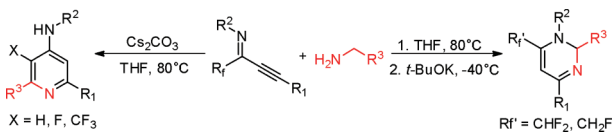
0.5 mol% I_2 catalyzed direct alkylation of indoles and amines by tertiary enamides in neat was reported to access to pharmaceutically active 2-oxo-1-pyrrolidine analogues.



Design, synthesis and evaluation of nitric oxide releasing derivatives of 3-*n*-butylphthalide as antiplatelet and antithrombotic agents

Xuliang Wang, Yang Li, Qian Zhao, Zhenli Min, Chao Zhang, Yisheng Lai, Hui Ji,* Sixun Peng and Yihua Zhang*

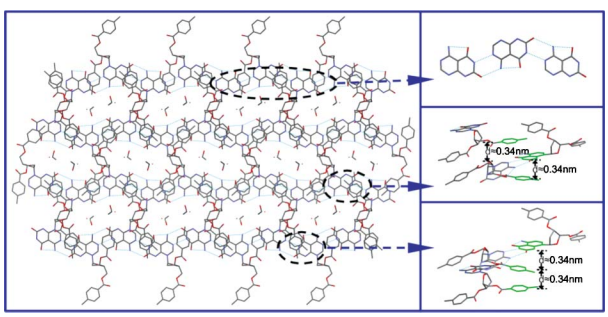
Novel NO-releasing derivatives of 3-n-butylphthalide (NBP) were designed and synthesized, and displayed inhibitory effects on platelet aggregation and thrombosis *in vitro* and *in vivo* superior to NBP and aspirin.



Selective synthesis of poly-substituted fluorine-containing pyridines and dihydropyrimidines *via* cascade C–F bond cleavage protocol

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

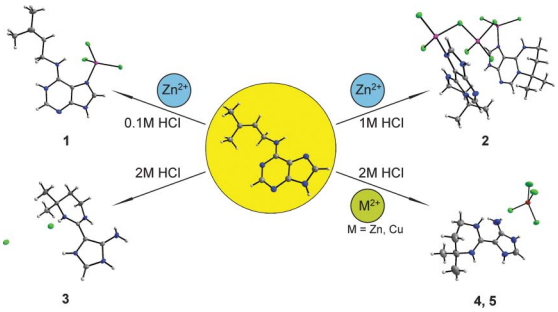
A series of fluorinated pyridines and dihydropyrimidines were prepared through a domino C–F cleavage process from trifluoromethyl-containing substrates.

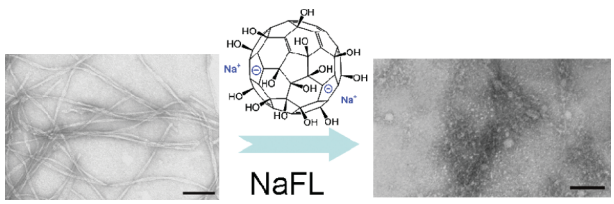


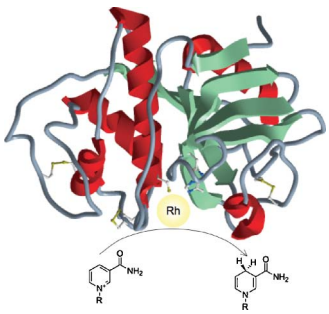
Janus-type AT nucleosides: synthesis, solid and solution state structures

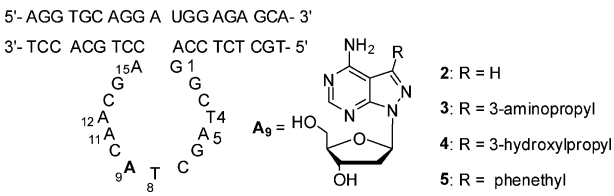
Mei-Ying Pan, Wen Hang, Xiao-Jun Zhao, Hang Zhao, Peng-Chi Deng, Zhi-Hua Xing, Yong Qing and Yang He*

The Janus-type AT nucleoside **6d** forms a honeycomb-like network through the hydrogen bonds and the aromatic stacking.









1st PACN Congress on Agricultural Productivity

How the chemical sciences can help to feed the world

21 – 23 November 2011
Accra International Convention Centre, Accra, Ghana

The Royal Society of Chemistry (RSC) is joining together with Syngenta to host the first Pan Africa Chemistry Network (PACN) Congress on Agricultural Productivity. This innovative conference will bring leading scientists together to discuss current research and ideas in the agricultural sciences - helping to feed the world!

Themes

Topics at the congress will include:

- Crop Protection
- Plant Nutrition
- Soil and Ecosystems
- Innovation in Agricultural Practices
- Adaptation to Climate Change

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Bursary application deadline:
19 September 2011

Registration deadline:
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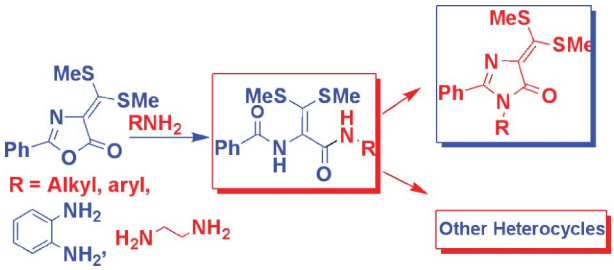

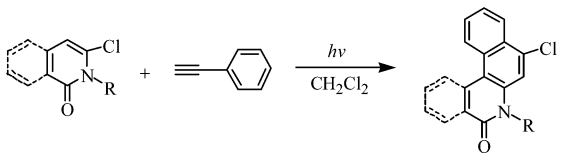

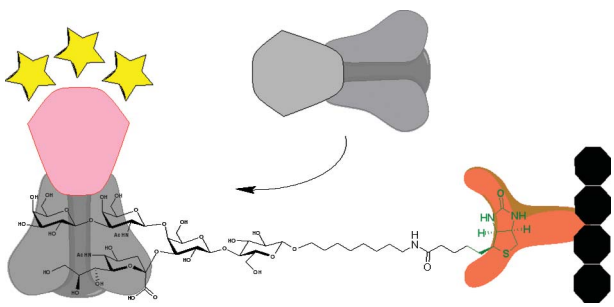

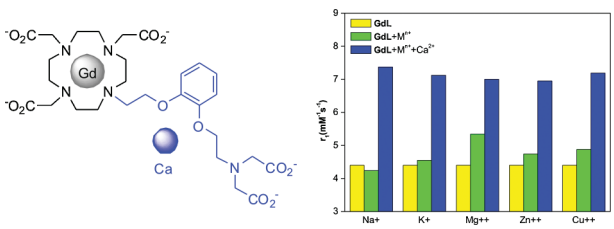

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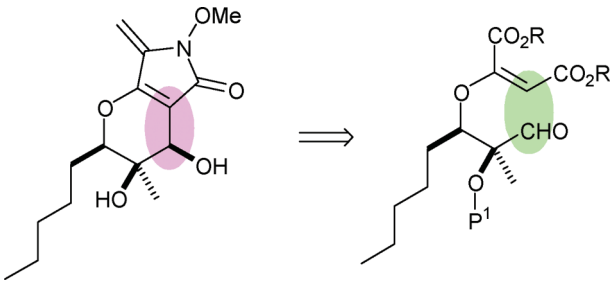
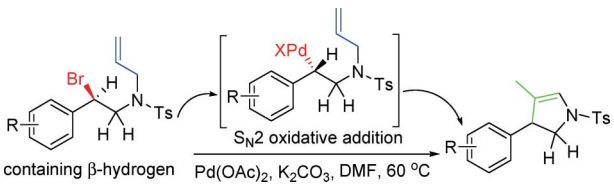


Synthesis of the proposed structure of phaeosphaeride A

Kenichi Kobayashi, Iwao Okamoto, Nobuyoshi Morita, Tamiko Kiyotani and Osamu Tamura*

The first synthesis of the proposed structure of phaeosphaeride A has been achieved by using an intramolecular vinyl-anion aldol reaction.

5833

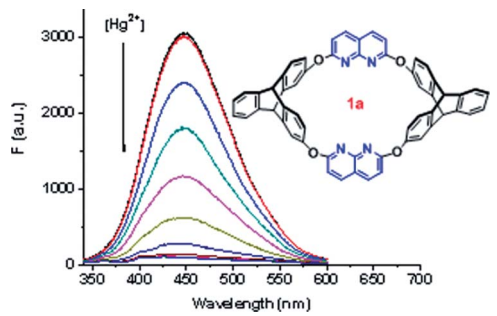


Ligand-free palladium-catalyzed intramolecular Heck reaction of secondary benzylic bromides

Wei Zhou, Guanghui An, Guangqian Zhang, Jianlin Han* and Yi Pan*

A ligand-free palladium-catalyzed intramolecular Heck reaction of β-hydrogen-containing secondary benzylic bromides was developed, which affords pyrroline derivatives with good regioselectivities.

5838

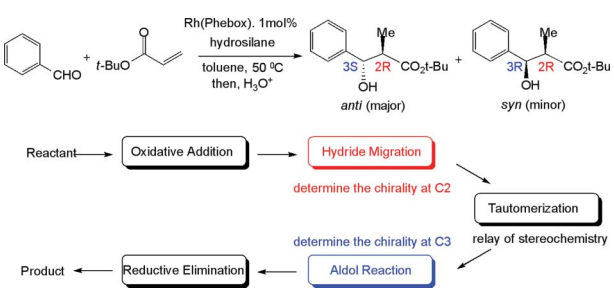


Hg^{2+} recognition by triptycene-derived heteracalixarenes: selectivity tuned by bridging heteroatoms and macrocyclic cavity

Shu-Zhen Hu and Chuan-Feng Chen*

Triptycene-derived oxacalixarene **1a** showed a highly selective response toward Hg^{2+} over other tested metal ions. This selectivity is controlled by the bridging heteroatoms and cavity structure of the macrocycle.

5845



Theoretical studies on the mechanism and stereoselectivity of Rh(Phebox)-catalyzed asymmetric reductive aldol reaction

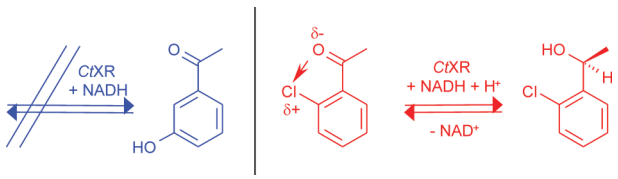
Yun-Fang Yang, Ting Shi, Xin-Hao Zhang, Zong-Xun Tang, Zhen-Yi Wen, Jun-Min Quan and Yun-Dong Wu*

An interesting mechanistic study provides a deeper understanding of the mechanism and stereoselectivity of the Rh(Phebox)-catalyzed reductive aldol reaction.

A rapid and facile method for the general synthesis of 3-aryl substituted 4,5,6,7-tetrahydro[1,2,3]triazolo[1,5-*a*]pyrazines and their ring fused analogues

Chinmay Chowdhury,* Sanjukta Mukherjee, Biswajit Chakraborty and Basudeb Achari

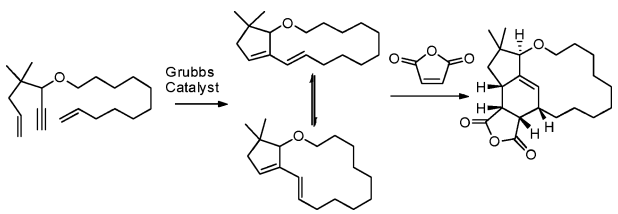
A facile one-pot method has been developed that provides rapid entry into 3-aryl substituted 4,5,6,7-tetrahydro[1,2,3]triazolo[1,5-*a*]pyrazines and their ring fused analogues.



Candida tenuis xylose reductase catalysed reduction of acetophenones: the effect of ring-substituents on catalytic efficiency

Michael Vogl, Regina Kratzer, Bernd Nidetzky and Lothar Brecker*

Efficiencies of *Ct*XR catalysed reductions of acetophenones are influenced by the electronic effects of substituents and are predictable by the spectroscopic properties of substrates.



Synthesis of fused multicyclic compounds containing macrocycles by dienyne ring-closing metathesis and Diels–Alder reactions

Hyeon Park and Tae-Lim Choi*

A strategy to synthesise fused bicyclic compounds containing macrocycles with high selectivity, generality, and predictability is disclosed by using dienyne ring-closing metathesis reaction. The resulting products undergo Diels–Alder reaction to yield multicyclic compounds with single diastereomers.

