

# Organic & Biomolecular Chemistry

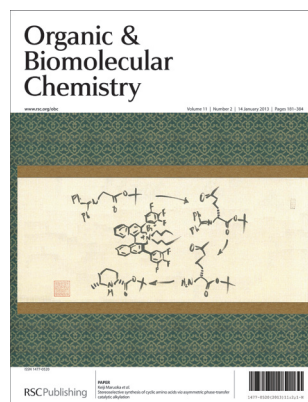
An international journal of synthetic, physical and biomolecular organic chemistry

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## IN THIS ISSUE

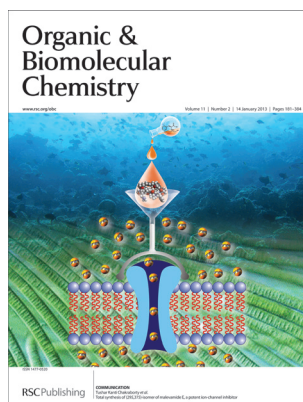
ISSN 1477-0520 CODEN OBCRAK 11(2) 181–384 (2013)



### Cover

See Keiji Maruoka *et al.*, pp. 271–278.

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### Inside cover

See Tushar Kanti Chakraborty *et al.*, pp. 257–260.

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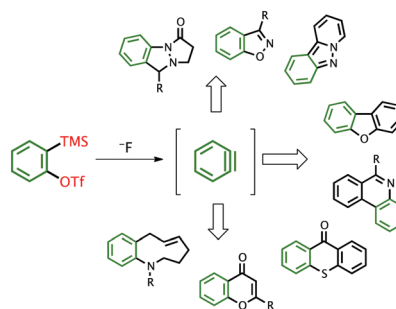
## PERSPECTIVES

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### Use of benzyne for the synthesis of heterocycles

Anton V. Dubrovskiy, Nataliya A. Markina and Richard C. Larock\*

This review provides a comprehensive survey of synthetic methods for the preparation of heterocycles utilizing benzyne generated from *o*-(trimethylsilyl)aryl triflates.

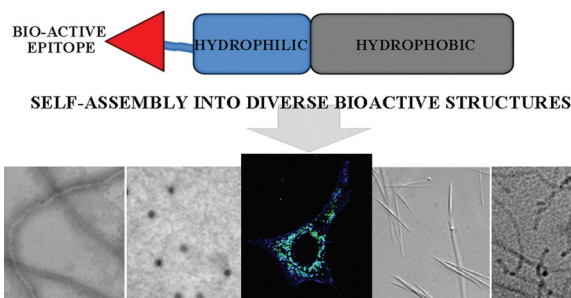


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### Supramolecular chemical biology; bioactive synthetic self-assemblies

Katja Petkau-Milroy and Luc Brunsveld\*

Supramolecular architectures in water allow peripheral decoration with bioactive epitopes and application to study and modulate biological processes.



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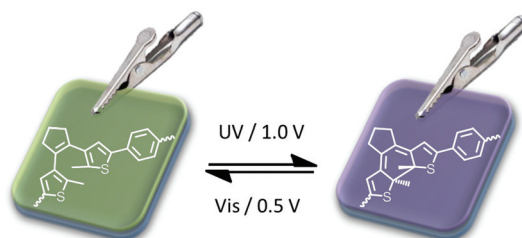
## PERSPECTIVES

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**Electrochemistry of dithienylethenes and their application in electropolymer modified photo- and redox switchable surfaces**

Hella Logtenberg and Wesley R. Browne\*

The electrochemistry of the dithienylethenes in solution and in electropolymerised films is reviewed.



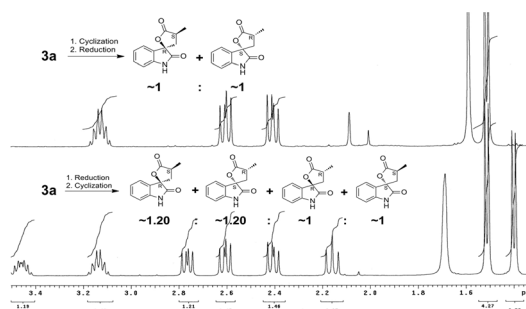
## COMMUNICATIONS

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**Face selective reduction of the exocyclic double bond in isatin derived spirocyclic lactones**

Sandeep Rana and Amarnath Natarajan\*

We report an unusual face selective reduction of the exocyclic double bond in the  $\alpha$ -methylene- $\gamma$ -butyrolactone motif of spiro-oxindole systems. The spiro-oxindoles were assembled by an indium metal mediated Barbier-type reaction followed by an acid catalyzed lactonization.

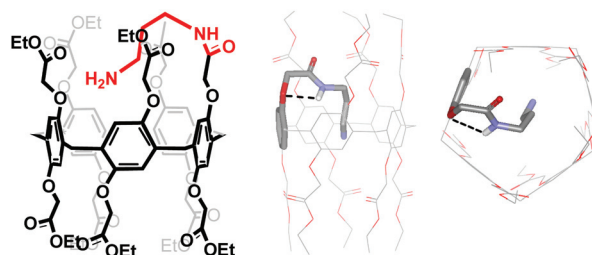


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**Pillar[5]arenes with an introverted amino group: a hydrogen bonding tuning effect**

Lei Chen, Zhiming Li, Zhenxia Chen and Jun-Li Hou\*

Pillar[5]arenes with an introverted amino group were synthesized through aminolysis, in that the hydrogen bonding not only stabilized the introverted structure, but also accelerated the aminolysis through stabilizing the intermediate of the reaction.

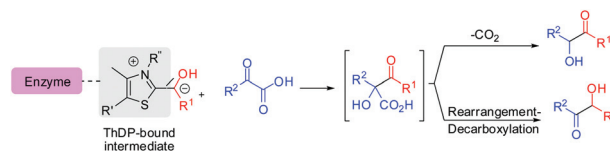


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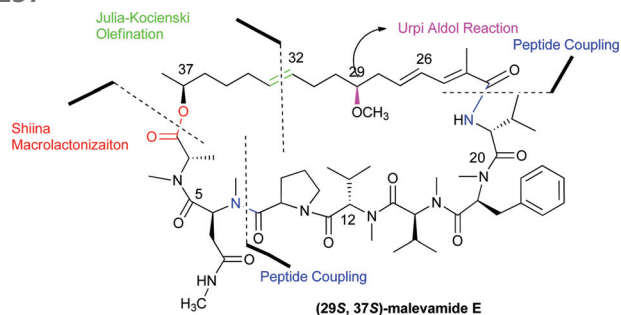
 **$\alpha$ -Hydroxy- $\beta$ -keto acid rearrangement-decarboxylation: impact on thiamine diphosphate-dependent enzymatic transformations**

Maryam Beigi, Sabrina Loschonsky, Patrizia Lehwald, Volker Brecht, Susana L. A. Andrade, Finian J. Leeper, Werner Hummel and Michael Müller\*

Impact of  $\alpha$ -hydroxy- $\beta$ -keto acid rearrangement-decarboxylation on enzymatic transformations.



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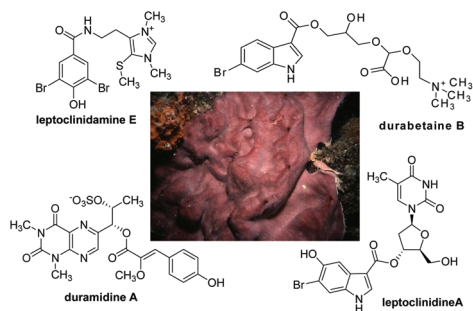
### Total synthesis of (29S,37S)-isomer of malevamide E, a potent ion-channel inhibitor

Praveen Kumar Gajula, Shrikant Sharma, Ravi Sankar Ampapathi and Tushar Kanti Chakraborty\*

The first total synthesis of (29S,37S)-isomer of malevamide E, a potent ion channel inhibitor, is described in a convergent fashion.

PAPERS

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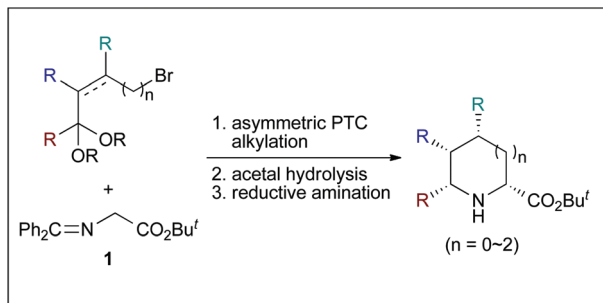


### Pteridine-, thymidine-, choline- and imidazole-derived alkaloids from the Australian ascidian, *Leptoclinides durus*

Kathryn E. Rudolph, Michelle S. Liberio, Rohan A. Davis and Anthony R. Carroll\*

Fourteen alkaloids including 11 new compounds from four different structure classes were isolated from the Australian ascidian, *Leptoclinides durus*.

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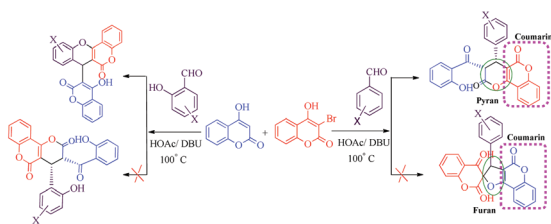


### Stereoselective synthesis of cyclic amino acids via asymmetric phase-transfer catalytic alkylation

Taichi Kano, Takeshi Kumano, Ryu Sakamoto and Keiji Maruoka\*

An asymmetric synthesis of cyclic amino acids was realized by combination of phase-transfer catalyzed asymmetric alkylation and subsequent reductive amination.

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### A diastereoselective synthesis of pyran fused coumarins via organocatalytic three-component reaction

Somayeh Ahadi, Mahdi Zolghadr, Hamid Reza Khavasi and Ayoob Bazgir\*

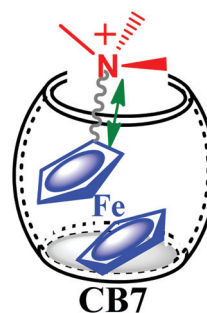
A diastereoselective synthesis of pyran fused coumarins using 3-bromo-4-hydroxycoumarins as cyclic  $\alpha$ -halo ketones is reported.

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### Probing the tolerance of cucurbit[7]uril inclusion complexes to small structural changes in the guest

Song Yi, Wei Li, Daniel Nieto, Isabel Cuadrado and Angel E. Kaifer\*

Small variations in guest structures are tolerated well by cucurbit[7]uril, leading to highly stable inclusion complexes with different electrochemical properties.

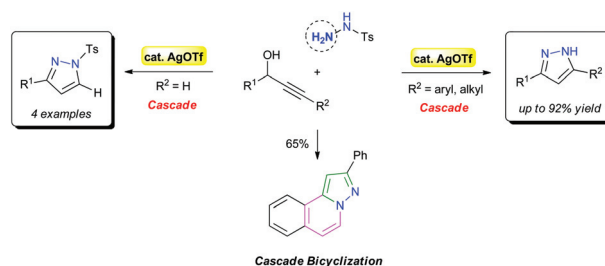


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### Chemoselective synthesis of substituted pyrazoles through AgOTf-catalyzed cascade propargylic substitution–cyclization–aromatization

Su-Xia Xu, Lu Hao, Tao Wang, Zong-Cang Ding and Zhuang-Ping Zhan\*

A cascade AgOTf-catalyzed chemoselective approach to 3,5/1,3-disubstituted pyrazoles from propargylic alcohols and *para*-tolylsulfonohydrazide has been developed.

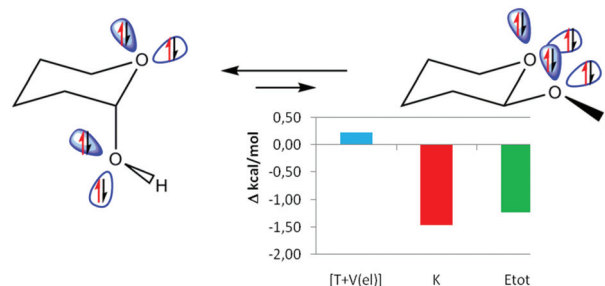


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### The anomeric effect: the dominance of exchange effects in closed-shell systems

Glauco F. Bauerfeldt, Thiago M. Cardozo, Márcio S. Pereira and Clarissa O. da Silva\*

The thermodynamical preference for the axial over the equatorial configuration of some anomers (anomeric effect) is determined by exchange effects.

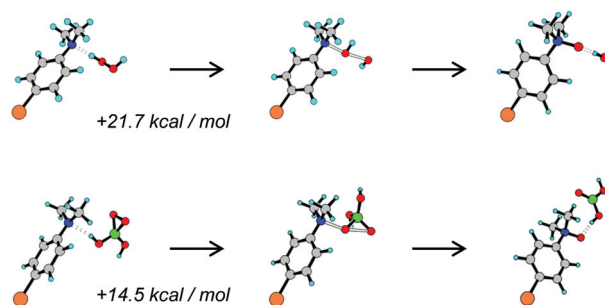


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### A kinetic and theoretical study of the borate catalysed reactions of hydrogen peroxide: the role of dioxaborirane as the catalytic intermediate for a wide range of substrates

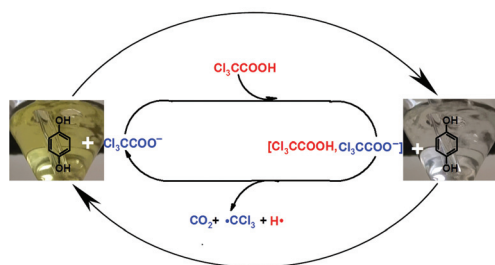
Michael E. Deary,\* Marcus C. Durrant and D. Martin Davies

Borate, through the formation of the dioxaborirane intermediate, catalyses the electrophilic reactions of hydrogen peroxide, as shown for the reaction with *p*-bromodimethylaniline.





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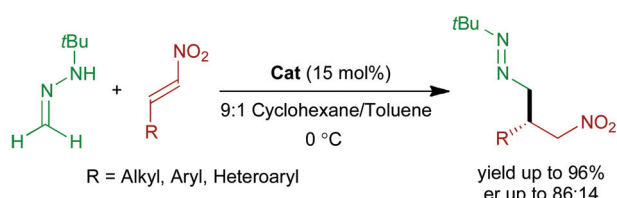


### Self-decarboxylation of trichloroacetic acid redox catalyzed by trichloroacetate ions in acetonitrile solutions

Drochss P. Valencia, Pablo D. Astudillo, Annia Galano and Felipe J. González\*

In mixtures of trichloroacetate ion and trichloroacetic acid in acetonitrile, trichloromethyl radicals are produced as a result of the redox reaction between the acid and its conjugate base.

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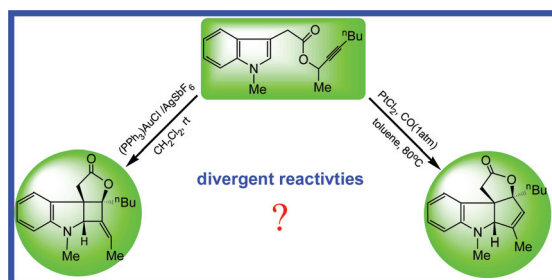


### Synthesis of enantioenriched azo compounds: organocatalytic Michael addition of formaldehyde *N*-*tert*-butyl hydrazone to nitroalkenes

David Monge,\* Silvia Daza, Pablo Bernal, Rosario Fernández\* and José M. Lassaletta\*

Chiral binaphthyl-based bis-thioureas are suitable H-bonding catalysts for the asymmetric formal diaza-ene reaction between formaldehyde *tert*-butyl hydrazone and nitroalkenes.

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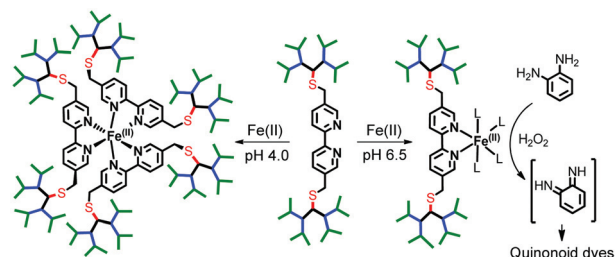


### Theoretical investigation on Pt(II)- and Au(I)-mediated cycloisomerizations of propargylic 3-indoleacetate: [3 + 2]- versus [2 + 2]-cycloaddition products

Yuxia Liu, Dongju Zhang,\* Siwei Bi and Chengbu Liu

DFT calculations are performed to understand the divergent reactivities of the cycloisomerizations of propargylic 3-indoleacetate catalyzed by PtCl<sub>2</sub> and (PPh<sub>3</sub>)AuSbF<sub>6</sub>.

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### pH-tuned metal coordination and peroxidase activity of a peptide dendrimer enzyme model with a Fe(II)bipyridine at its core

Piero Geotti-Bianchini, Tamis Darbre\* and Jean-Louis Reymond\*

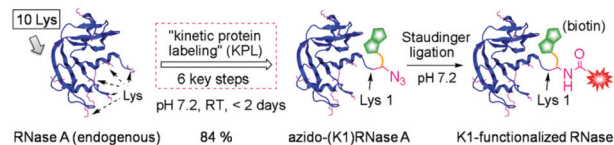
The polyanionic peptide dendrimer with bipyridine in the core forms a 1 : 1 Fe(II) complex at pH 6.5 which catalyzes the oxidation of *o*-phenylenediamine.

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### Site-selective azide incorporation into endogenous RNase A via a "chemistry" approach

Xi Chen, Lars Henschke, Qianzhen Wu, Kasturi Muthoosamy, Boris Neumann and Tanja Weil\*

A bioorthogonal azido group was site-specifically introduced to K1 of endogenous ribonuclease A via an optimized kinetically-controlled protein labeling approach.

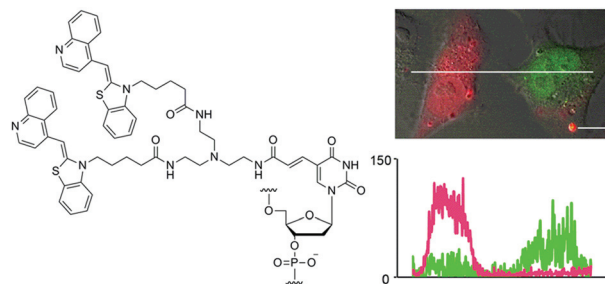


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### A nucleic acid probe labeled with desmethyl thiazole orange: a new type of hybridization-sensitive fluorescent oligonucleotide for live-cell RNA imaging

Akimitsu Okamoto,\* Kaori Sugizaki, Mizue Yuki, Hiroyuki Yanagisawa, Shuji Ikeda, Takuma Sueoka, Gosuke Hayashi and Dan Ohtan Wang

A nucleoside with desmethyl thiazole orange dyes has been developed for live-cell RNA imaging.

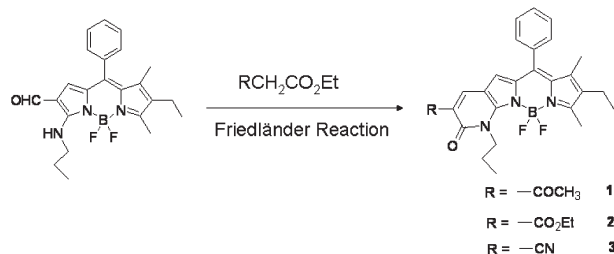


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### Pyridone fused boron-dipyrromethenes: synthesis and properties

Chunchang Zhao,\* Jinxin Zhang, Xuzhe Wang and Yanfen Zhang

A general procedure for generation of pyridone fused BODIPYs was developed, using a Friedländer reaction for post-modification of ready-made BODIPY core.

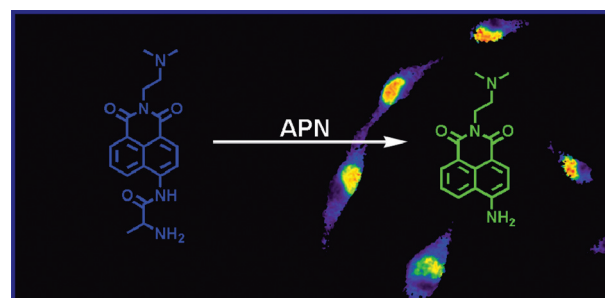


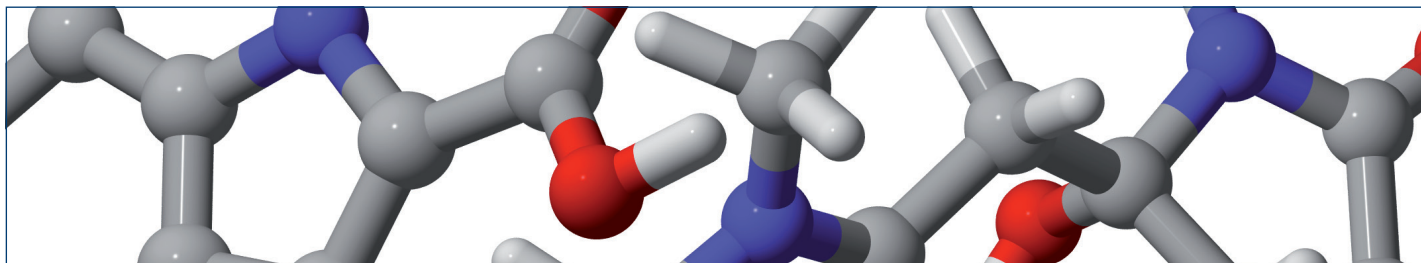
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### The first ratiometric fluorescent probes for aminopeptidase N cell imaging

Laizhong Chen, Wei Sun, Jing Li, Zhenzhen Liu, Zhao Ma, Wei Zhang, Lupei Du, Wenfang Xu, Hao Fang and Minyong Li\*

This article describes the first ratiometric fluorescent probes for aminopeptidase N cell imaging.





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Standard registration – 15 May 2013

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