

# Organic & Biomolecular Chemistry

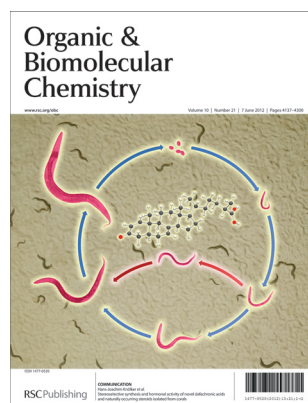
An international journal of synthetic, physical and biomolecular organic chemistry

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## IN THIS ISSUE

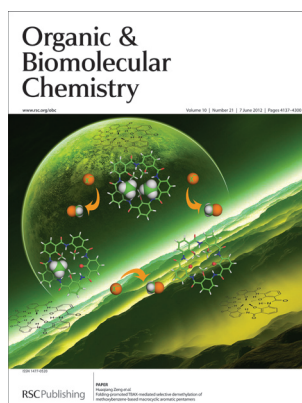
ISSN 1477-0520 CODEN OBCRAK 10(21) 4137–4300 (2012)



### Cover

See Knölker *et al.*,  
pp. 4159–4163.

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*Org. Biomol. Chem.*, 2012, **10**,  
4159.



### Inside cover

See Zeng *et al.*,  
pp. 4164–4171.

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*Org. Biomol. Chem.*, 2012, **10**,  
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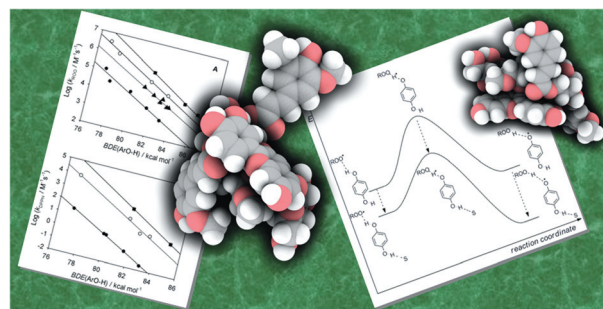
## PERSPECTIVE

4147

### Modulation of the antioxidant activity of phenols by non-covalent interactions

Riccardo Amorati\* and Luca Valgimigli\*

The role of H-bond interactions in the radical chemistry of natural polyphenolic antioxidants is discussed with the aid of model compounds.



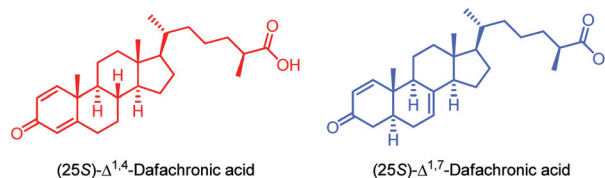
## COMMUNICATION

4159

### Stereoselective synthesis and hormonal activity of novel dafachronic acids and naturally occurring steroids isolated from corals

Ratni Saini, Sebastian Boland, Olga Kataeva, Arndt W. Schmidt, Teymuraz V. Kurzchalia\* and Hans-Joachim Knölker\*

A series of novel dafachronic acids has been synthesized and their hormonal activity has been tested by rescuing worms from dauer arrest. (25*S*)- $\Delta^{1,4}$ -Dafachronic acid was isolated previously from the Indonesian soft coral *Minabea* sp.



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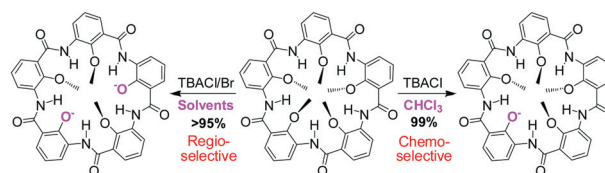
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4164

### Folding-promoted TBAX-mediated selective demethylation of methoxybenzene-based macrocyclic aromatic pentamers

Zhiyun Du, Bo Qin, Chang Sun, Ying Liu, Xi Zheng, Kun Zhang, Allan H. Conney and Huaqiang Zeng\*

Tetrabutylammonium salt-mediated demethylations are found to be chemo- and regioselective and promoted by the H-bonding-enforced folding of the macrocyclic backbones.

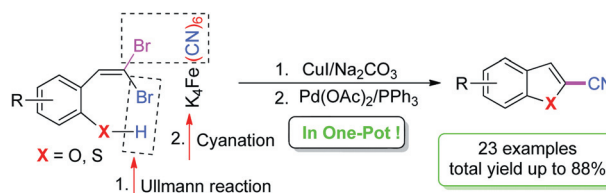


4172

### A highly efficient one-pot reaction of 2-(*gem*-dibromovinyl)phenols(thiophenols) with $K_4Fe(CN)_6$ to 2-cyanobenzofurans(thiophenes)

Wei Zhou, Wei Chen and Lei Wang\*

2-Cyanobenzofurans and 2-cyanobenzothiophenes were prepared through an efficient one-pot CuI/Pd(OAc)<sub>2</sub>-catalyzed Ullmann/cyanation reaction of 2-(*gem*-dibromovinyl)phenols and 2-(*gem*-dibromovinyl)thiophenols with  $K_4Fe(CN)_6$ .

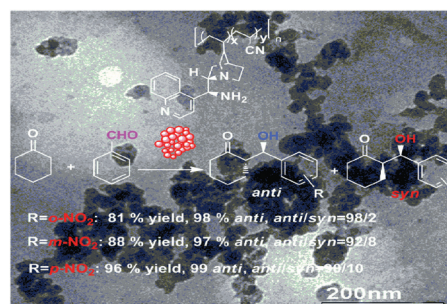


4179

### Copolymer-supported heterogeneous organocatalyst for asymmetric aldol addition in aqueous medium

Jinqing Zhou, Jinwei Wan, Xuebing Ma\* and Wei Wang

A novel type of recycled and copolymer-supported 9-amino-9-deoxy-*epi*-cinchonine organocatalyst gave excellent isolated yields and stereoselectivities in the asymmetric aldol addition in water.

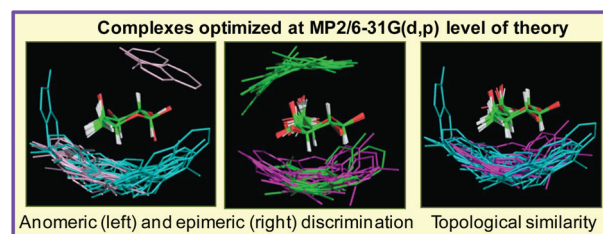


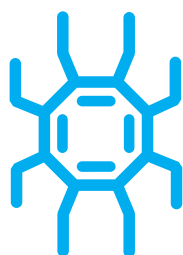
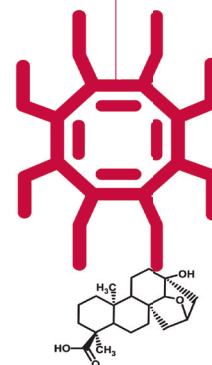
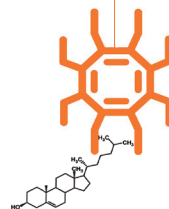
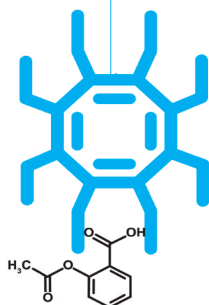
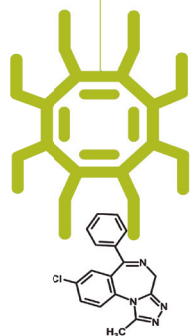
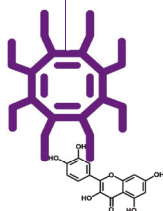
4186

### Conformational mapping and energetics of saccharide–aromatic residue interactions: implications for the discrimination of anomers and epimers and in protein engineering

Manju Kumari, Raghavan B. Sunoj\* and Petety V. Balaji\*

Highlights: The CH $\cdots\pi$  bound stacking and OH $\cdots$ O/ $\pi$  bound non-stacking saccharide–aromatic residue complexes exhibit vital geometric and energetic differences in the binding pattern of anomers and epimers.





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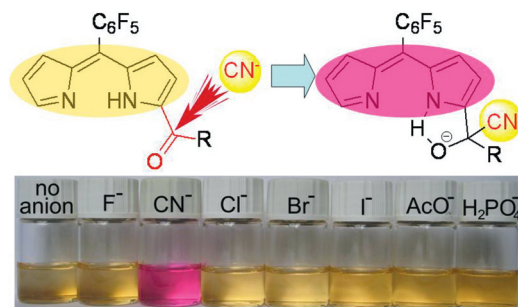
## PAPERS

4201

**Highly selective colorimetric sensing of cyanide based on formation of dipyrin adducts**

Yubin Ding, Tong Li, Weihong Zhu\* and Yongshu Xie\*

The introduction of a carbonyl group to dipyrins afforded **1–3** for sensing  $\text{CN}^-$  in both organic solvents and aqueous solutions by vivid colour changes from light yellow to pink.

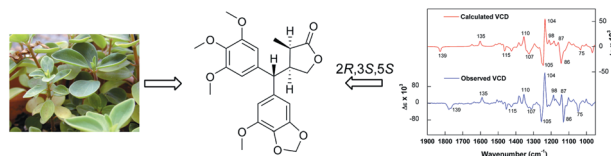


4208

**VCD to determine absolute configuration of natural product molecules: secolignans from *Peperomia blanda***

Lidiane G. Felipe, João M. Batista Jr.,\* Debora C. Baldoqui, Isabele R. Nascimento, Massuo J. Kato, Yanan He, Laurence A. Nafie and Maysa Furlan\*

The absolute configuration of a new secolignan from *Peperomia blanda* (Piperaceae) was determined using VCD and DFT calculations.



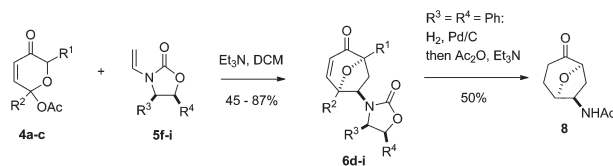
The absolute configuration of a new secolignan from *Peperomia blanda* (Piperaceae) was determined using VCD and DFT calculations

4215

**Diastereoselective 1,3-dipolar cycloaddition of pyrylium ylides with chiral enamides**

Kirill Tchabanenko,\* Colleen Sloan, Yves-Mael Bunetel and Philip Mullen

We demonstrate the first example of the use of amides as alkene activators in the 1,3-dipolar cycloaddition reactions of pyrylium ylides.

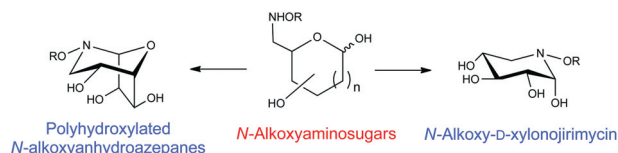


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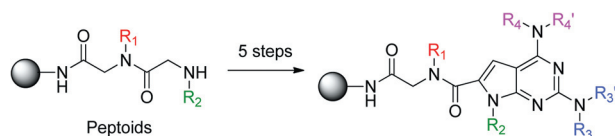
**Intramolecular cyclization of alkoxyaminosugars: access to novel glycosidase inhibitor families**

Elisa Martínez-Castro, Alejandro González-Benjumea, Óscar López, Inés Maya, Eleuterio Álvarez and José G. Fernández-Bolaños\*

We report the synthesis of two novel families of iminosugars as glycosidase inhibitors involving an intramolecular cyclization between an *N*-alkoxyamino group and a latent aldehyde of a reducing sugar as the key step.



4229

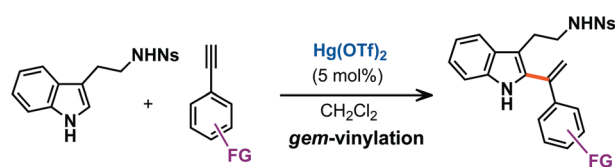


### Solid-phase synthesis of tetrasubstituted pyrrolo[2,3-*d*]-pyrimidines

Ji Hoon Lee and Hyun-Suk Lim\*

A facile solid phase synthesis of tetrasubstituted pyrrolo[2,3-*d*]-pyrimidines is described, which involves a highly efficient five-step route starting from resin-bound dimeric peptoids.

4236

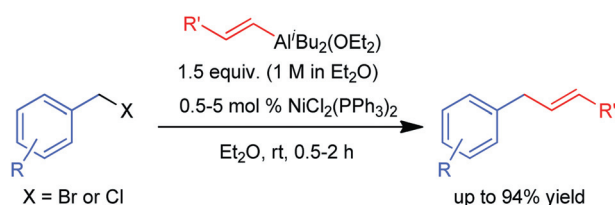


### $\text{Hg}(\text{OTf})_2$ -catalyzed direct vinylation of tryptamines and versatile applications for tandem reactions

Haruki Mizoguchi, Hideaki Oikawa and Hiroki Oguri\*

$\text{Hg}(\text{OTf})_2$ -catalyzed *gem*-vinylation of tryptamines with aromatic acetylenes proceed with high chemo- and regio-selectivities under mild conditions.

4243

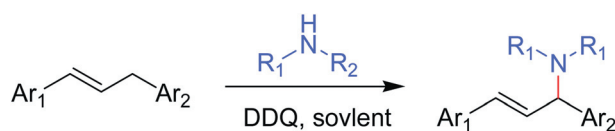


### An efficient nickel-catalyzed alkenylation of functionalized benzylic halides with alkenylaluminum reagents

Deepak B. Biradar and Han-Mou Gau\*

Highly efficient coupling reactions of benzylic bromides or chlorides with alkenylalanes catalyzed by low loadings of  $\text{NiCl}_2(\text{PPh}_3)_2$  catalyst are reported.

4249



### Metal-free synthesis of allylic amines by cross-dehydrogenative-coupling of 1,3-diarylpropenes with anilines and amides under mild conditions

Zhiming Wang, Hanjie Mo, Dongping Cheng and Weiliang Bao\*

Selective monoallylation and diallylation of primary anilines *via* dehydrogenative cross-coupling reactions promoted by DDQ were realized.

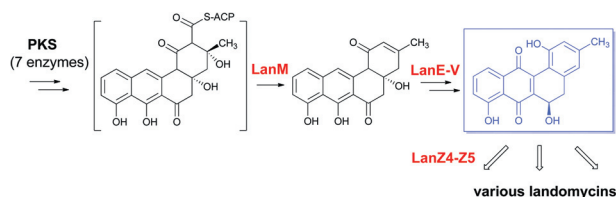
## PAPERS

4256

**Elucidation of post-PKS tailoring steps involved in landomycin biosynthesis**

Madan K. Kharel, Pallab Pahari, Khaled A. Shaaban, Guojun Wang, Caleb Morris and Jürgen Rohr\*

A systematic recombination of pathway enzymes (7 PKS/5 selected post-PKS) allowed the unambiguous determination of the sequence of events of landomycin biosynthesis.

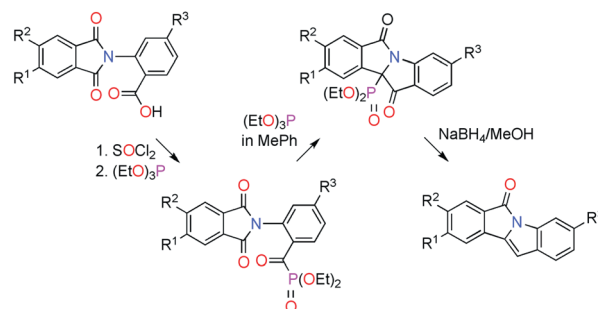


4266

**A novel approach to isoindolo[2,1-a]indol-6-ones**

Philip Duncanson, Yuen-Ki Cheong, Majid Motevalli and D. Vaughan Griffiths\*

Heating 2-(*N*-phthaloyl)benzoyl chlorides with triethyl phosphite in toluene gives  $\beta$ -ketophosphonates that on reduction with sodium borohydride form the required indolones.



4280

**Phosphine-mediated cascade reaction of azides with MBH-acetates of acetylenic aldehydes to substituted pyrroles: a facile access to *N*-fused pyrrolo-heterocycles**

Chada Raji Reddy,\* Motatipally Damoder Reddy and Boinapally Srikanth

A new cascade approach for the synthesis of substituted pyrroles is developed and further utilized to access *N*-fused pyrrolo-heterocycles.

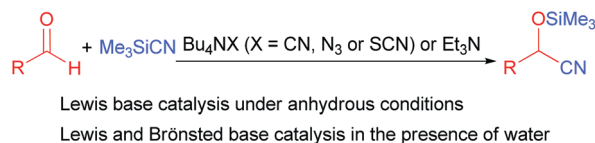


4289

**Kinetics and mechanism of the racemic addition of trimethylsilyl cyanide to aldehydes catalysed by Lewis bases**

Michael North,\* Marta Omedes-Pujol and Carl Young

The addition of trimethylsilyl cyanide to aldehydes is shown to be subject to Lewis and/or Brønsted base catalysis.



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