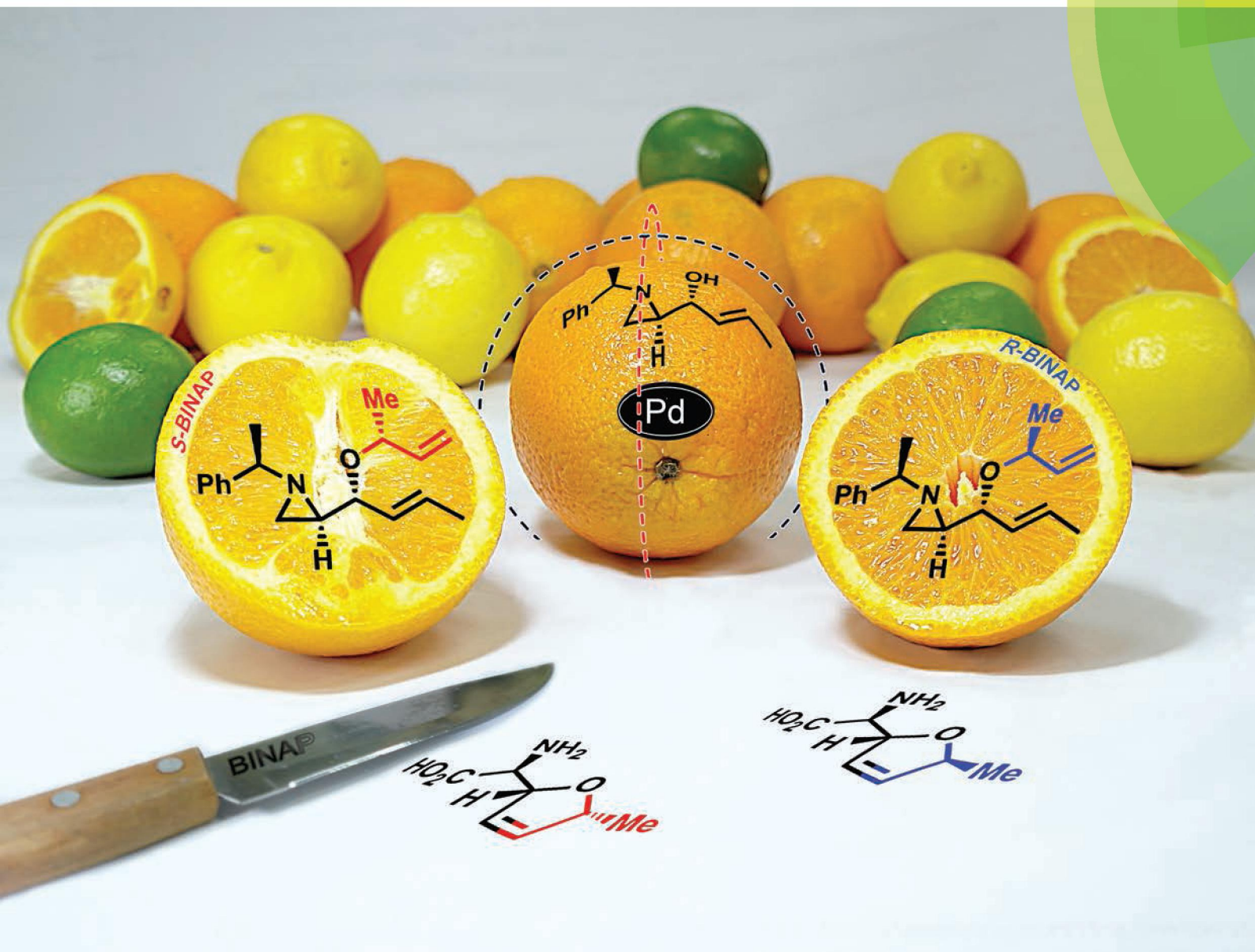


# Organic & Biomolecular Chemistry

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ISSN 1477-0520



PAPER

Won Koo Lee, Hyun-Joon Ha *et al.*  
Stereoselective Pd-catalyzed etherification and asymmetric synthesis of furanomycin and its analogues from a chiral aziridine

# Organic & Biomolecular Chemistry

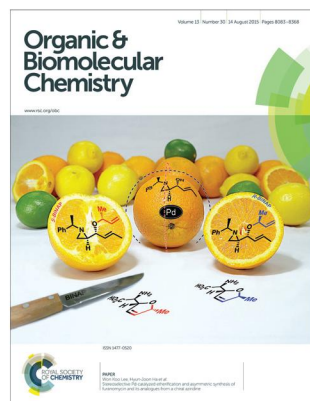
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## IN THIS ISSUE

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See Won Koo Lee,  
Hyun-Joon Ha *et al.*,  
pp. 8187–8195.

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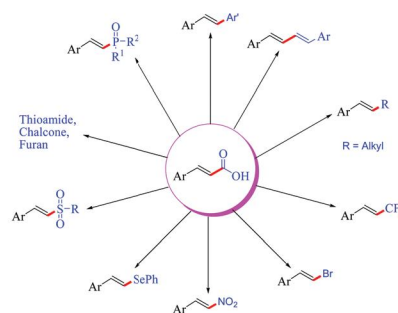
## REVIEWS

8094

### Decarboxylative functionalization of cinnamic acids

Arun Jyoti Borah and Guobing Yan\*

Decarboxylative functionalization of  $\alpha,\beta$ -unsaturated carboxylic acids is an emerging area that has been developed significantly in recent years.

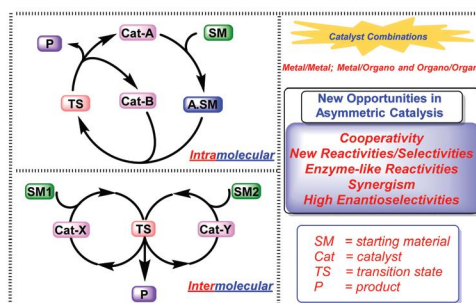


8116

### Enantioselective cooperative catalysis

Suleman M. Inamdar, Valmik S. Shinde and Nitin T. Patil\*

This review focuses on enantioselective cooperative catalytic reactions, wherein two catalysts work simultaneously to form products which cannot be obtained by the use of a single catalyst alone, which have attracted considerable attention in recent years.



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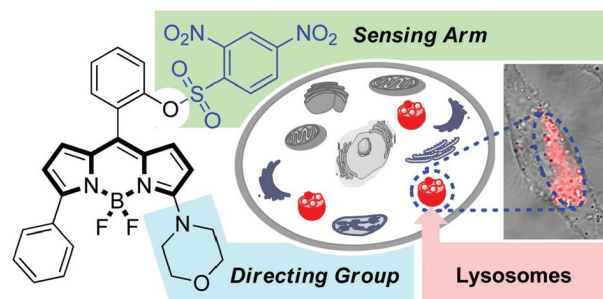
## COMMUNICATIONS

8163

**Lysosome targeting fluorescence probe for imaging intracellular thiols**

Dnyaneshwar Kand, Tanmoy Saha, Mayurika Lahiri and Pinaki Talukdar\*

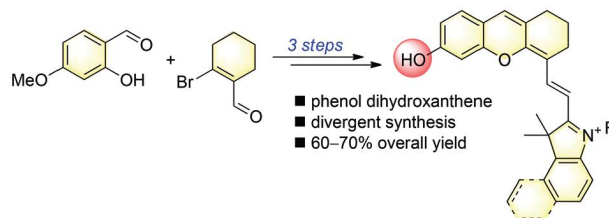
A BODIPY-based fluorescence turn-on probe for lysosomal localization and biothiol sensing is reported.



8169

**De novo synthesis of phenolic dihydroxanthene near-infrared emitting fluorophores**

Jean-Alexandre Richard\*

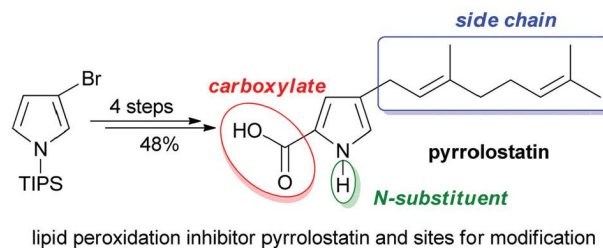
We report a flexible *de novo* synthesis of phenolic dihydroxanthenes in 60–70% yield thanks to a one-pot cascade sequence.

8173

**Short and highly efficient synthesis of lipid peroxidation inhibitor pyrrolostatin and some analogues thereof**

Jens Schmidt, Juliane Adrian and Christian B. W. Stark\*

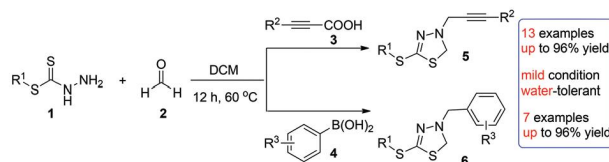
A highly efficient and scalable synthesis of the potent lipid peroxidation inhibitor pyrrolostatin is presented together with strategies to modify the key structural subunits.



8177

**Multicomponent domino reactions of hydrazinecarbodithioates: concise access to 3-substituted 5-thiol-1,3,4-thiadiazolines**

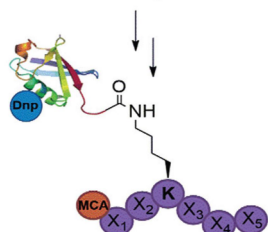
Huihui Jia, Huangdi Feng and Zhihua Sun\*

Two classes of addition/cycloaddition cascade reactions of hydrazinecarbodithioate (**1**) have been developed under mild reaction conditions.

## COMMUNICATIONS

8182

## Chemical Synthesis



## Rapid identification of DUBs substrates

## Rapid optimization of labeled ubiquitinated peptides for monitoring deubiquitinases activities

Shimrit Ohayon, Maya Refua and Ashraf Brik\*

A new synthetic approach is reported which enables the rapid synthesis of labeled-ubiquitinated peptides to facilitate optimization of deubiquitinases substrates.

## PAPERS

8187

## Stereoselective Pd-Catalyzed Etherification



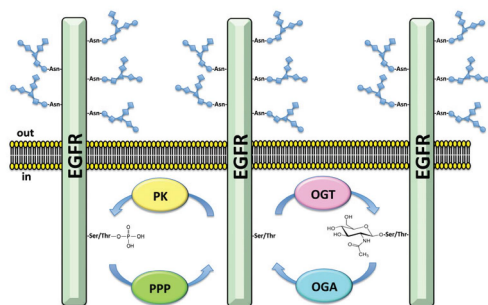
Furanomycin ( $R^1 = \text{Me}$ ,  $R^2 = \text{H}$ )  
 5'-*epi*-Furanomycin ( $R^1 = \text{H}$ ,  $R^2 = \text{Me}$ )  
 Norfuranomycin ( $R^1 = R^2 = \text{H}$ )

## Stereoselective Pd-catalyzed etherification and asymmetric synthesis of furanomycin and its analogues from a chiral aziridine

Jae-Hoon Jung, Doo-Ha Yoon, Kyuwoong Lee, Hyeonah Shin, Won Koo Lee,\* Cheol-Min Yook and Hyun-Joon Ha\*

A chiral aziridine was utilized for the synthesis of the anti-bacterial natural amino acid L-(+)-furanomycin, and its analogues including 5'-*epi*-furanomycin and norfuranomycin.

8196

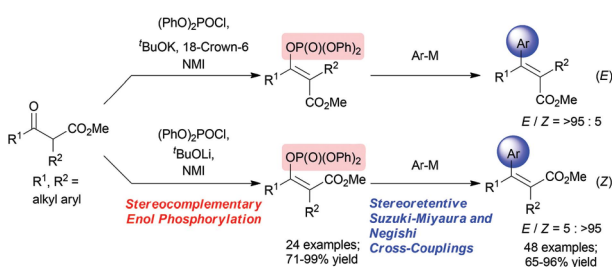


## O-GlcNAcylation of the human epidermal growth factor receptor

Silviya R. Stateva and Antonio Villalobo\*

The cartoon represents the EGFR at the plasma membrane where serine/threonine residues could be subjected to phosphorylation/dephosphorylation events by protein kinases (PK) and phospho-protein phosphatases (PPP) and to O-GlcNAcylation/deGlcNAcylation events by O-linked  $\beta$ -N-acetylglucosamine transferase (OGT) and O-linked  $\beta$ -N-acetylglucosaminidase (OGA).

8205

*(E)*- and *(Z)*-stereodefined enol phosphonates derived from  $\beta$ -ketoesters: stereocomplementary synthesis of fully-substituted  $\alpha,\beta$ -unsaturated esters

Hidefumi Nakatsuji,\* Yuichiro Ashida, Hiroshi Hori, Yuka Sato, Atsushi Honda, Mayu Taira and Yoo Tanabe\*

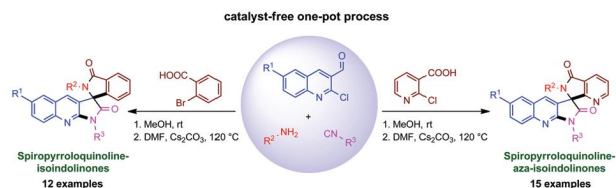
A versatile, robust, and stereocomplementary synthesis of fully-substituted (*E*)- and (*Z*)-stereodefined  $\alpha,\beta$ -unsaturated esters **3** from accessible  $\alpha$ -substituted  $\beta$ -ketoesters **1** via (*E*)- and (*Z*)-enol phosphonates was achieved.

8211

### One-pot synthesis of spiropyrroloquinoline-isoindolinone and their aza-analogs via the Ugi-4CR/metal-free intramolecular bis-annulation process

Mehdi Ghandi,\* Nahid Zarezadeh and Alireza Abbasi

This presentation discloses a one-pot synthesis of a series of spiropyrroloquinoline isoindolinone and spiropyrroloquinoline aza-isoindolinone scaffolds.



8221

### Ag-mediated cascade decarboxylative coupling and annulation: a convenient route to 2-phosphinobenzo[b]phosphole oxides

Gaobo Hu, Yun Zhang, Jue Su, Zezhou Li, Yuxing Gao\* and Yufen Zhao

Structurally sophisticated 2-phosphinobenzo[b]phosphole oxide frameworks have been conveniently constructed by cascade decarboxylative coupling and annulation reactions.

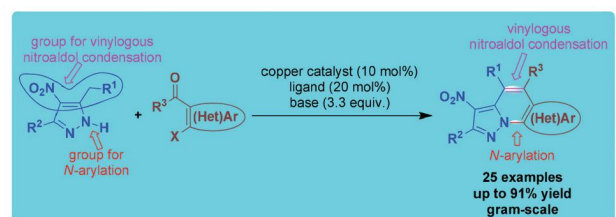


8232

### Tandem copper (Cu) catalysed *N*-arylation–vinylogous nitroaldol condensation of 3,5-disubstituted 4-nitroprazoles

Owk Obulesu, Jagadeesh Babu Nanubolu and Suriseti Suresh\*

A tandem process involving copper catalysed *N*-arylation and vinylogous nitroaldol condensation is described.

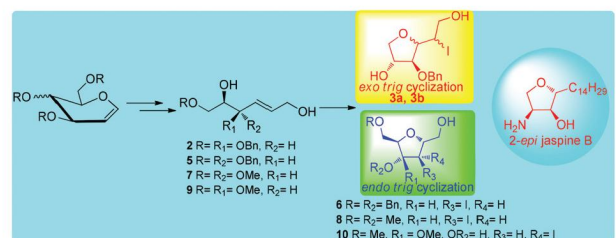


8241

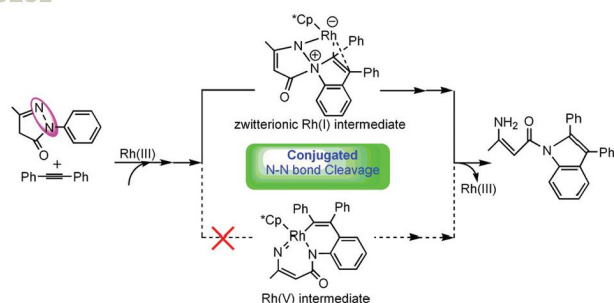
### Substrate and stereocontrolled iodocycloetherification of highly functionalized enantiomerically pure allylic alcohols: application to synthesis of cytotoxic 2-*epi* jaspine B and its biological evaluation

S. Kundooru, P. Das, S. Meena, V. Kumar, M. I. Siddiqi, D. Datta and A. K. Shaw\*

A mechanistic study on iodocycloetherification of enantiopure allylic alcohols is established. Its application to synthesis of marine cytotoxic 2-*epi* jaspine B has been demonstrated.



8251

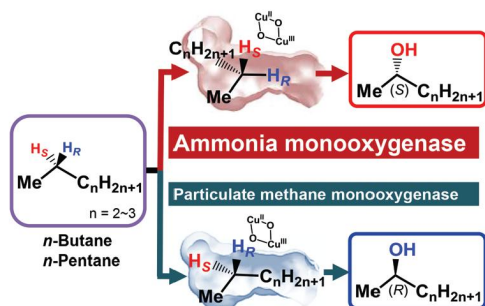


### Mechanistic insight into conjugated N–N bond cleavage by Rh(III)-catalyzed redox-neutral C–H activation of pyrazolones

Weirong Wu, Yuxia Liu\* and Siwei Bi\*

DFT calculations are performed to understand the conjugated N–N bond cleavage by Rh(III)-catalyzed redox-neutral C–H activation of pyrazolones with PhC≡CPh.

8261

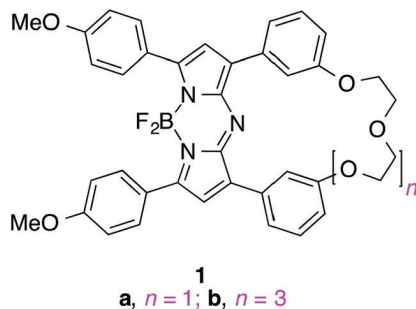


### Discrimination of the prochiral hydrogens at the C-2 position of *n*-alkanes by the methane/ammonia monooxygenase family proteins

Akimitsu Miyaji, Teppei Miyoshi, Ken Motokura and Toshihide Baba\*

The substrate binding site of AMO/pMMO family proteins can discriminate between the prochiral hydrogens at the C-2 position of *n*-alkanes. We predict that at least one of the three amino acid residues at the di-copper site affects the discriminating ability of the family proteins.

8271

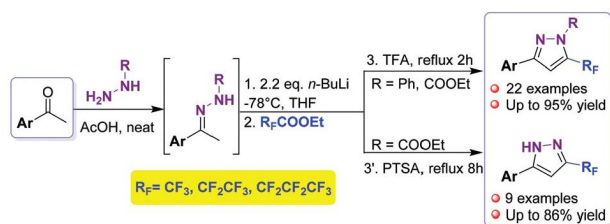


### Oligoethylene glycol-substituted aza-BODIPY dyes as red emitting ER-probes

Anyanee Kamkaew, Sopida Thavornpradit, Thamon Puangsamlee, Dongyue Xin, Nantanit Wanichacheva and Kevin Burgess\*

This study features aza-BODIPY (BF<sub>2</sub>-chelated azadipyromethene) dyes with two aromatic substituents linked by oligoethylene glycol fragments to increase hydrophilicity of aza-BODIPY for applications in intracellular imaging.

8277



### Efficient one-pot synthesis of 5-perfluoroalkylpyrazoles by cyclization of hydrazone dianions

Thang Ngoc Ngo, Syeda Abida Ejaz, Tran Quang Hung, Tuan Thanh Dang,\* Jamshed Iqbal, Joanna Lecka, Jean Sévigny and Peter Langer\*

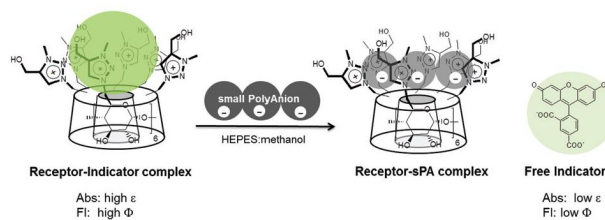
A highly selective and efficient method for the synthesis of 5-trifluoromethylated and 5-perfluoroalkylated pyrazoles has been developed which relies on the cyclization of hydrazine dianions with ethyl perfluorocarboxylates.

8291

### Small polyanion recognition of a triazolium cyclodextrin click cluster in water

Hoa Thi Le, Seung Cheol Park, Chulhun Kang, Choon Woo Lim\* and Tae Woo Kim\*

In order to detect small polyanions (sPAs), which play important roles in many biological systems, a triazolium cyclodextrin click cluster was synthesized and its sPA binding properties were characterized.

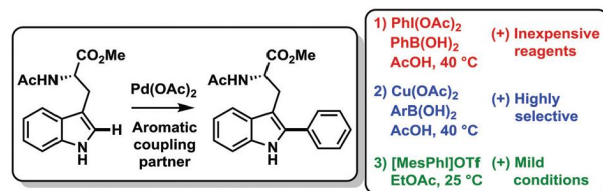


8298

### Unified mild reaction conditions for C2-selective Pd-catalysed tryptophan arylation, including tryptophan-containing peptides

Alan J. Reay, Thomas J. Williams and Ian J. S. Fairlamb\*

Mild Pd-mediated C–H functionalisation protocols, facilitating tryptophan C2-arylation, have been developed. Tryptophan-containing peptides, susceptible to oxidation, have been arylated.

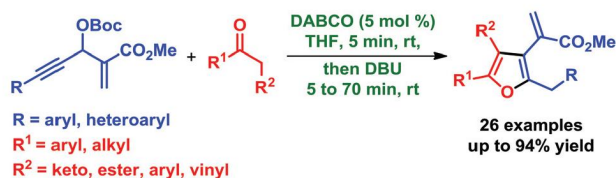


8310

### A [3 + 2]-annulation approach to tetrasubstituted furans from MBH-carbonates of acetylenic aldehydes via sequential substitution/cycloisomerization

Chada Raji Reddy,\* Siddique Z. Mohammed and Paridala Kumaraswamy

A new organo base-mediated cascade reaction has been developed for the synthesis of uniquely substituted tetrasubstituted furans, 2-furan-3-yl acrylates, starting from MBH-carbonates of acetylenic aldehydes and keto-methylenes.

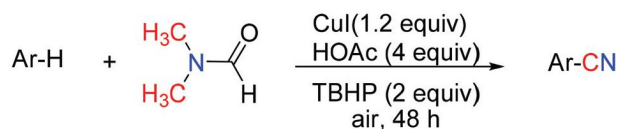


8322

### Copper-mediated cyanation of indoles and electron-rich arenes using DMF as a single surrogate

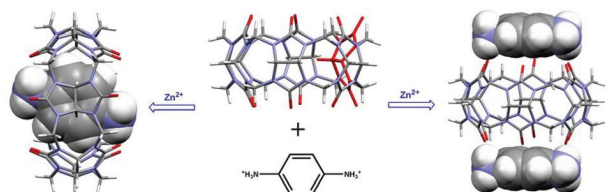
Lianpeng Zhang, Ping Lu\* and Yanguang Wang\*

The copper-mediated cyanation of indoles with DMF as a single surrogate of "CN" has been realized.





8330



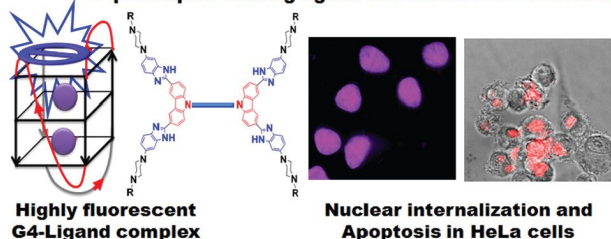
### Mixed behavior of *p*-phenylenediaminium guest binding with the inverted cucurbit[6]uril host

De-Qing Zhang, Rui-Lian Lin, Wen-Qi Sun, Zhu Tao,\* Qian-Jian Zhu and Jing-Xin Liu\*

The binding interaction between inverted cucurbit[6]uril (iQ[6]) and *p*-phenylenediaminium has been investigated by X-ray crystallography,  $^1\text{H}$  NMR spectroscopy and ITC. Our data indicate that the host and the guest can form two different types of complexes: one is an inclusion structure and the other is a sandwich structure.

8335

### G-quadruplex binding ligand and telomerase inhibitor

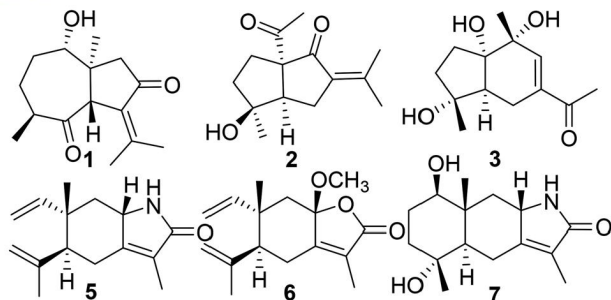


### New dimeric carbazole–benzimidazole mixed ligands for the stabilization of human telomeric G-quadruplex DNA and as telomerase inhibitors. A remarkable influence of the spacer

Basudeb Maji, Krishan Kumar, K. Muniyappa and Santanu Bhattacharya\*

G-quadruplex DNA binding dimeric ligands and their telomerase inhibition activity are reported.

8349

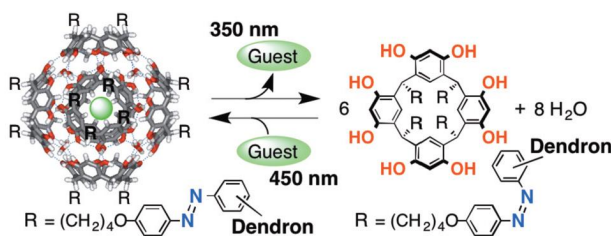


### Natural nitric oxide (NO) inhibitors from the rhizomes of *Curcuma phaeocaulis*

Jiang-Hao Ma, Feng Zhao, Ying Wang, Yue Liu, Su-Yu Gao, Li-Qin Ding, Li-Xia Chen\* and Feng Qiu\*

Four new sesquiterpenes, two nor-sesquiterpenes including a new skeleton, one cyclic diarylheptanoid, and one aromatic acid were isolated from *Curcuma phaeocaulis*.

8359



### Photoresponsive self-assembled hexameric capsules based on calix[4]resorcinarenes bearing azobenzene dendron conjugates as side chains

Tsubasa Sakano, Toshifumi Ohashi, Masamichi Yamanaka and Kenji Kobayashi\*

Calix[4]resorcinarenes with azobenzene dendron conjugates achieve control of the assembly–disassembly–reassembly process of the hydrogen-bonded hexameric capsules by a light stimulus.

## CORRECTION

8365

**Correction: Biofunction-assisted aptasensors based on ligand-dependent 3' processing of a suppressor tRNA in a wheat germ extract**

Atsushi Ogawa\* and Junichiro Tabuchi



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