Volume 12 | Number 27 | 21 July 2014 | Pages 4765–5040

Organic & Biomolecular Chemistry

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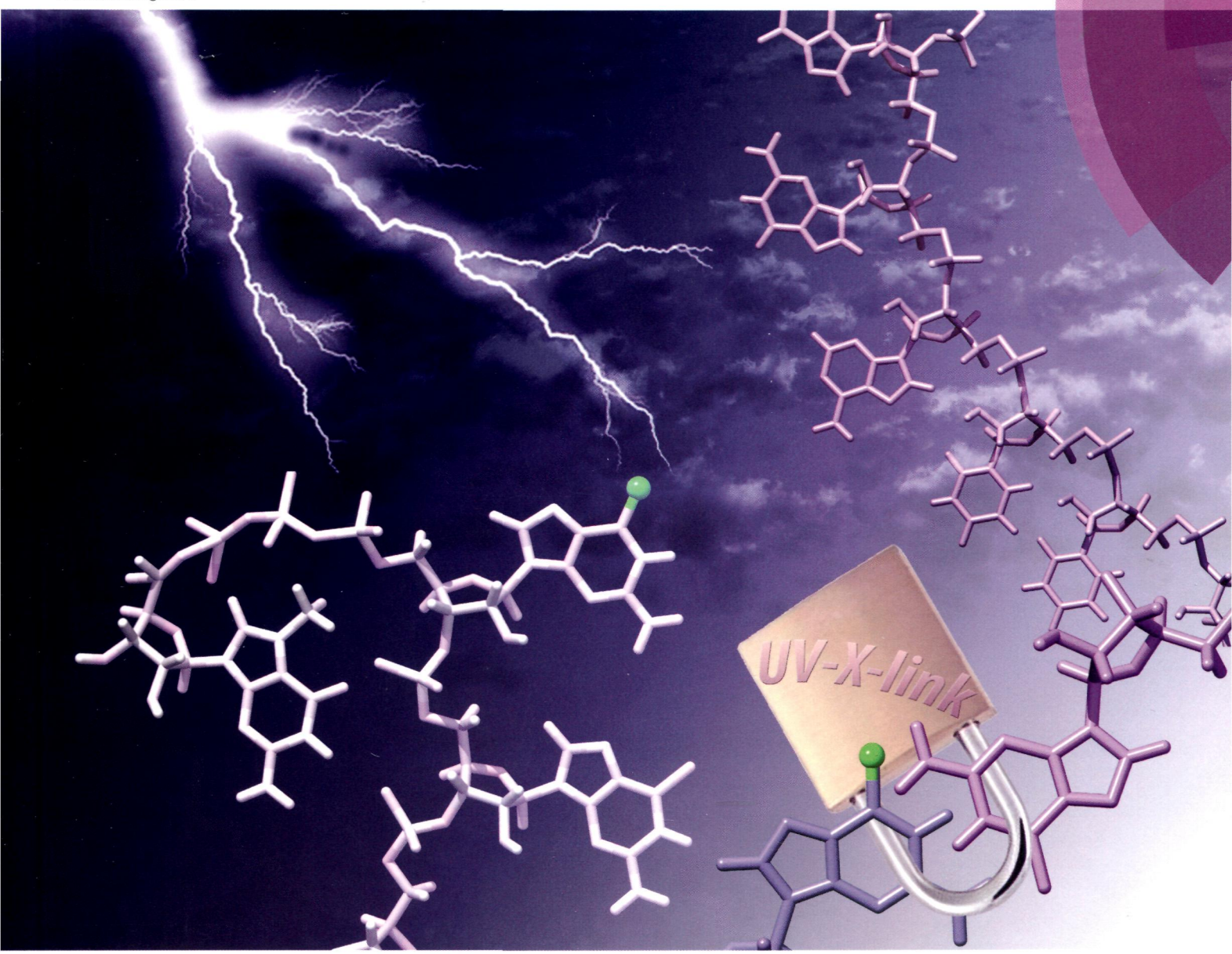

ISSN 1477-0520

ROYAL SOCIETY OF CHEMISTRY

PAPER
Jacek Jemielity *et al.*
Cap analogs containing 6-thioguanosine – reagents for the synthesis of mRNAs selectively photo-crosslinkable with cap-binding biomolecules

Organic & Biomolecular Chemistry

An international journal of synthetic, physical and biomolecular organic chemistry

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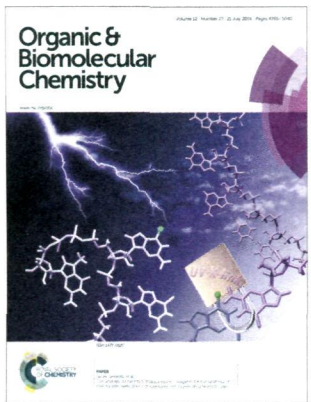
IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 12(27) 4765–5040 (2014)



Cover
See Jacek Jemielity *et al.*, pp. 4841–4847.

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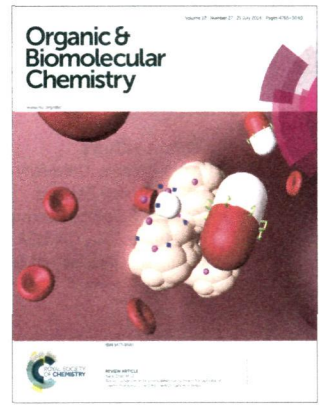

Inside cover
See Yanli Zhao *et al.*, pp. 4776–4806.

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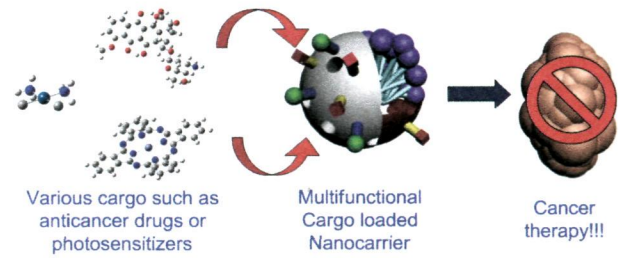
REVIEWS

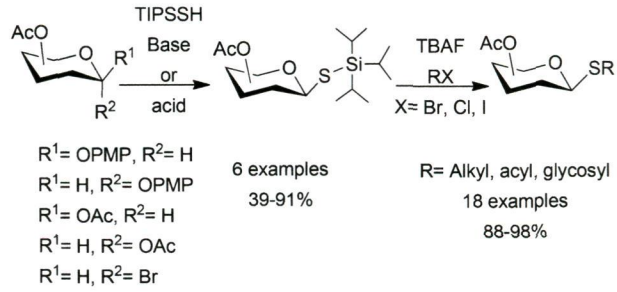


4815

Tri-isopropylsilyl thioglycosides as masked glycosyl thiol nucleophiles for the synthesis of S-linked glycosides and glyco-conjugates

S. Mandal and U. J. Nilsson*

Tri-isopropylsilyl thio-glycosides (TIPS S-glycosides), readily synthesized from glycosyl halides, glycosyl acetates, or *p*-methoxyphenyl glycosides, were in one-pot de-silylated and S-alkylated, -acylated, or -glycosylated in high yields and short time.

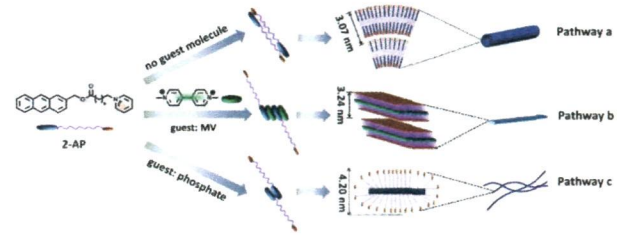


4820

Dual responsive supramolecular amphiphiles: guest molecules dictate the architecture of pyridinium-tailored anthracene assemblies

Jun Hu, Peiyi Wang, Yuan Lin, Song Yang, Baoan Song* and Qian Wang*

By introducing an electron-deficient guest molecule and a counter anion, the assembly morphology of 1-[11-(2-anthracenylmethoxy)-11-oxoundecyl]pyridinium bromide (**2-AP**) was transformed to microsheets and nanofibers from microtubes, respectively.

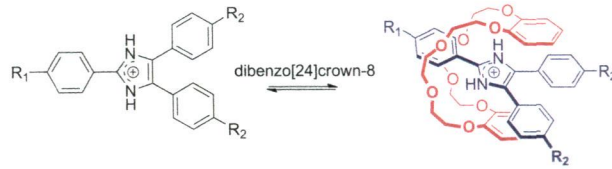


4824

[2]Pseudorotaxane formation between rigid Y-shaped 2,4,5-triphenylimidazolium axles and [24]crown-8 ether wheels

Nasim Farahani, Kelong Zhu, Nadim Noujeim and Stephen J. Loeb*

A new templating motif for the formation of [2]pseudorotaxanes is described in which rigid, Y-shaped axles with an imidazolium core and aromatic substituents at the 2-, 4- and 5-positions interact with [24]crown-8 ether wheels ([24]crown-8 and dibenzo[24]crown-8).

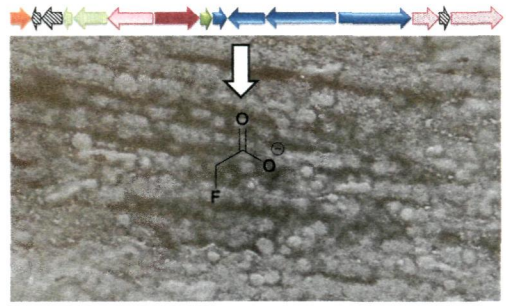


4829

Fluoroacetate biosynthesis from the marine-derived bacterium *Streptomyces xinghaiensis* NRRL B-24674

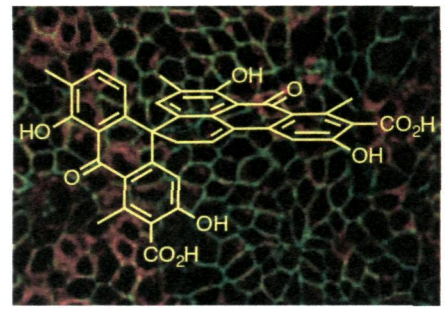
Sheng Huang, Long Ma, Ming Him Tong, Yi Yu,* David O'Hagan and Hai Deng*

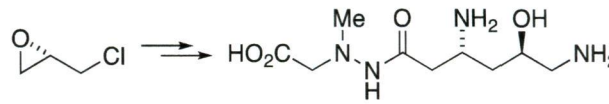
Streptomyces xinghaiensis is the first fluorometabolite producing microorganism identified from the marine environment.

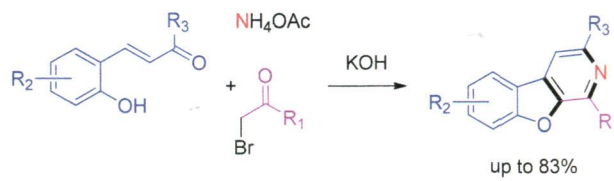


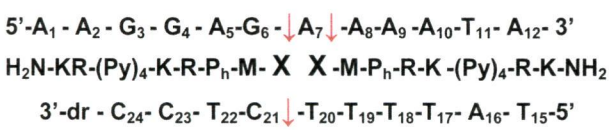
COMMUNICATIONS

PAPERS





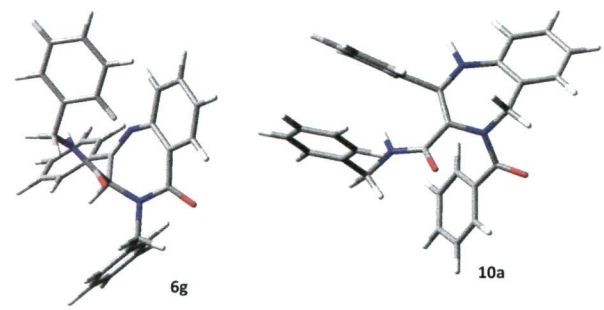




Enthalpy-driven nuclease-like activity and mechanism of peptide–chlorambucil conjugates

Robin C. K. Yang, Jonathan T. B. Huang, Yu-Ling Chen, Chia-Chun Hung, Mokai Liao, Wen-Chen Yao, Chiu-Heng Chen, Chien-Chung Liou, Michael J. Waring and Leung Sheh*

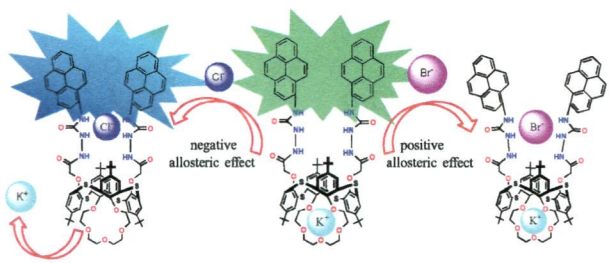
The chemical nuclease activity, energetics, and stepwise cleavage mechanism of chlorambucil–peptide conjugates are presented.



Experimental and theoretical studies on the effect of the oxo group in 1,4-benzodiazepines

Pablo Pertejo, María García-Valverde,* Pablo Peña, Nicolás A. Cordero, Tomás Torroba and Alfonso González-Ortega

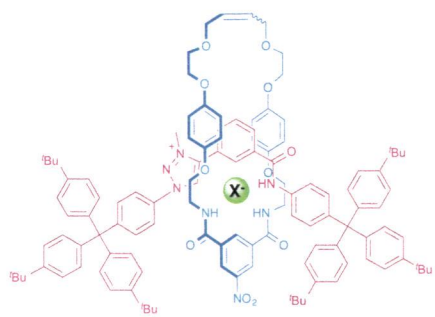
Two families of regioisomeric 1,4-benzodiazepines have been synthesized through a similar Ugi/reduction cyclization sequence. Their conformation and stability depend on the relative position of the carbonyl group adjacent to the nitrogen at the 4-position in the benzodiazepine system.



A study of allosteric binding behaviour of a 1,3-*alternate* thiacalix[4]arene-based receptor using fluorescence signal

Hirotsugu Tomiyasu, Cheng-Cheng Jin, Xin-Long Ni, Xi Zeng, Carl Redshaw and Takehiko Yamato*

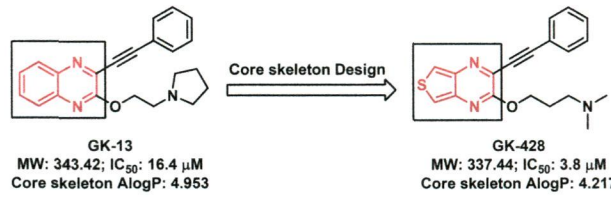
The allosteric binding behaviour of a receptor **L** bearing a 1,3-*alternate* conformation based thiacalix[4]arene has been evaluated by fluorescence and ^{1}H NMR titration experiments.

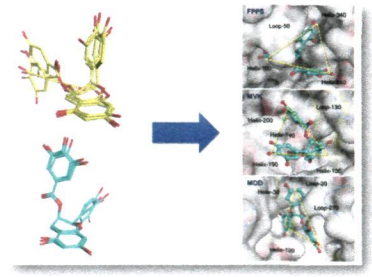


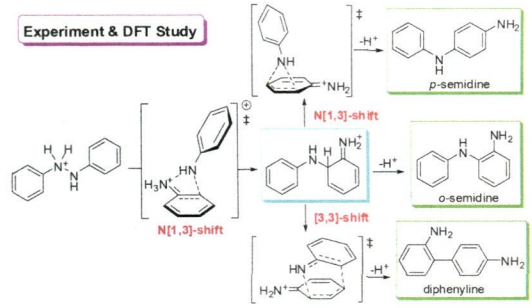
Halide selective anion recognition by an amide-triazolium axle containing [2]rotaxane

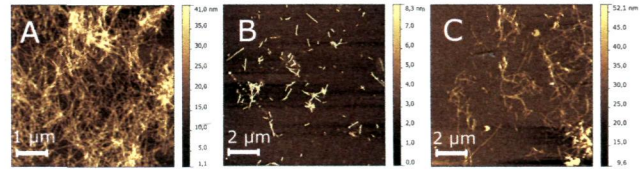
Nicholas G. White, Ana R. Colaço, Igor Marques, Vítor Félix and Paul D. Beer*

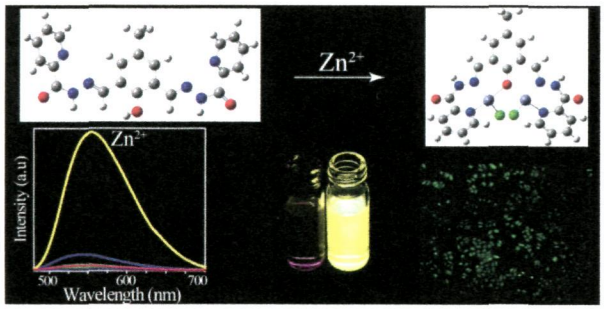
A [2]rotaxane incorporating the novel 3-amido-phenyl-triazolium motif exhibits unusually high selectivity for halide anions over larger more basic oxoanions. Computational studies offer insight into this selectivity preference.







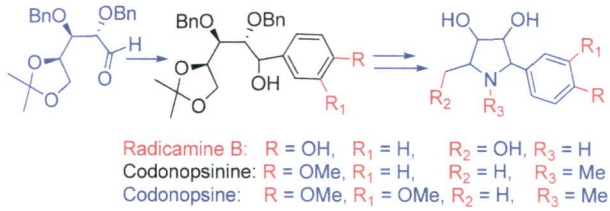




A novel chemosensor with visible light excitability for sensing Zn^{2+} in physiological medium and in HeLa cells

Barun Kumar Datta, Durairaj Thiyagarajan, Soham Samanta, Aiyagari Ramesh* and Gopal Das*

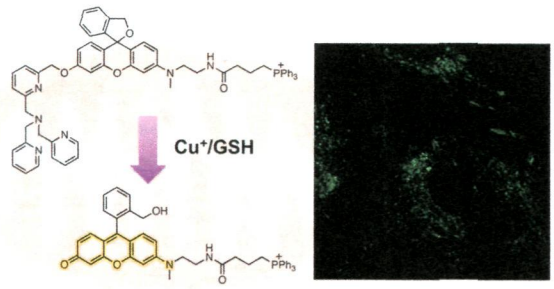
A highly sensitive, fluorescent, non-cytotoxic turn-on chemosensor with visible light excitability for the detection of intracellular Zn^{2+} ions.



An easy route to synthetic analogues of radicamine B, codonopsine and codonopsinine from D-mannitol

Suresh Dharuman, Ashok Kumar Palanivel and Yashwant D. Vankar*

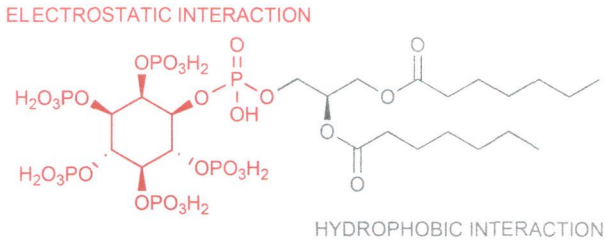
Analogues of radicamine B, codonopsinine and codonopsine were synthesized from D-mannitol and found to be good inhibitors of various glycosidases.



A mitochondria-targeted turn-on fluorescent probe based on a rhodol platform for the detection of copper(I)

Masayasu Taki,* Kazushi Akaoka, Koji Mitsui and Yukio Yamamoto

A new spirocyclized rhodol-based fluorescent probe has been developed for detecting mitochondrial Cu^{+}.



Lipid coupled IP_6: *Kd*=0.25 μM for HIV-1 MA

Design and synthesis of lipid-coupled inositol 1,2,3,4,5,6-hexakisphosphate derivatives exhibiting high-affinity binding for the HIV-1 MA domain

Hiroshi Tateishi, Kensaku Anraku, Ryoko Koga, Yoshinari Okamoto, Mikako Fujita and Masami Otsuka*

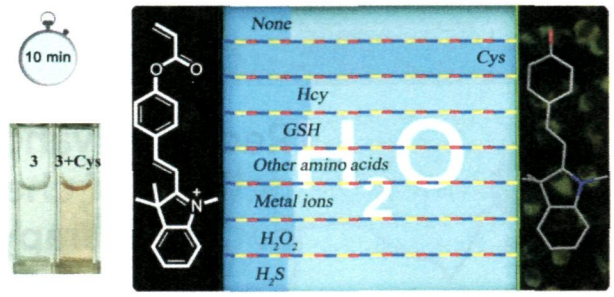
Lipid-coupled inositol 1,2,3,4,5,6-hexakisphosphate binds to HIV-1 MA tightly through both electrostatic and hydrophobic interactions.

5023

A colorimetric and ratiometric fluorescent probe for distinguishing cysteine from biothiols in water and living cells

Qingxin Han, Zhaohua Shi, Xiaoliang Tang, Lizi Yang, Zuolin Mou, Jing Li, Jinmin Shi, Chunyang Chen, Wei Liu, Huan Yang and Weisheng Liu*

A highly selective merocyanine-based fluorescent probe was developed, which can significantly distinguish Cys from Hcy and GSH by their kinetic profiles in water and respond to the intracellular Cys.



5031

Synthesis of DIBAC analogues with excellent SPAAC rate constants

Marjoke F. Debets, Jasper S. Prins, Donny Merkx, Sander S. van Berkel, Floris L. van Delft, Jan C. M. van Hest and Floris P. J. T. Rutjes*

Four new DIBAC analogues showed excellent SPAAC rate constants making them comparable to the fastest cyclooctynes currently known.