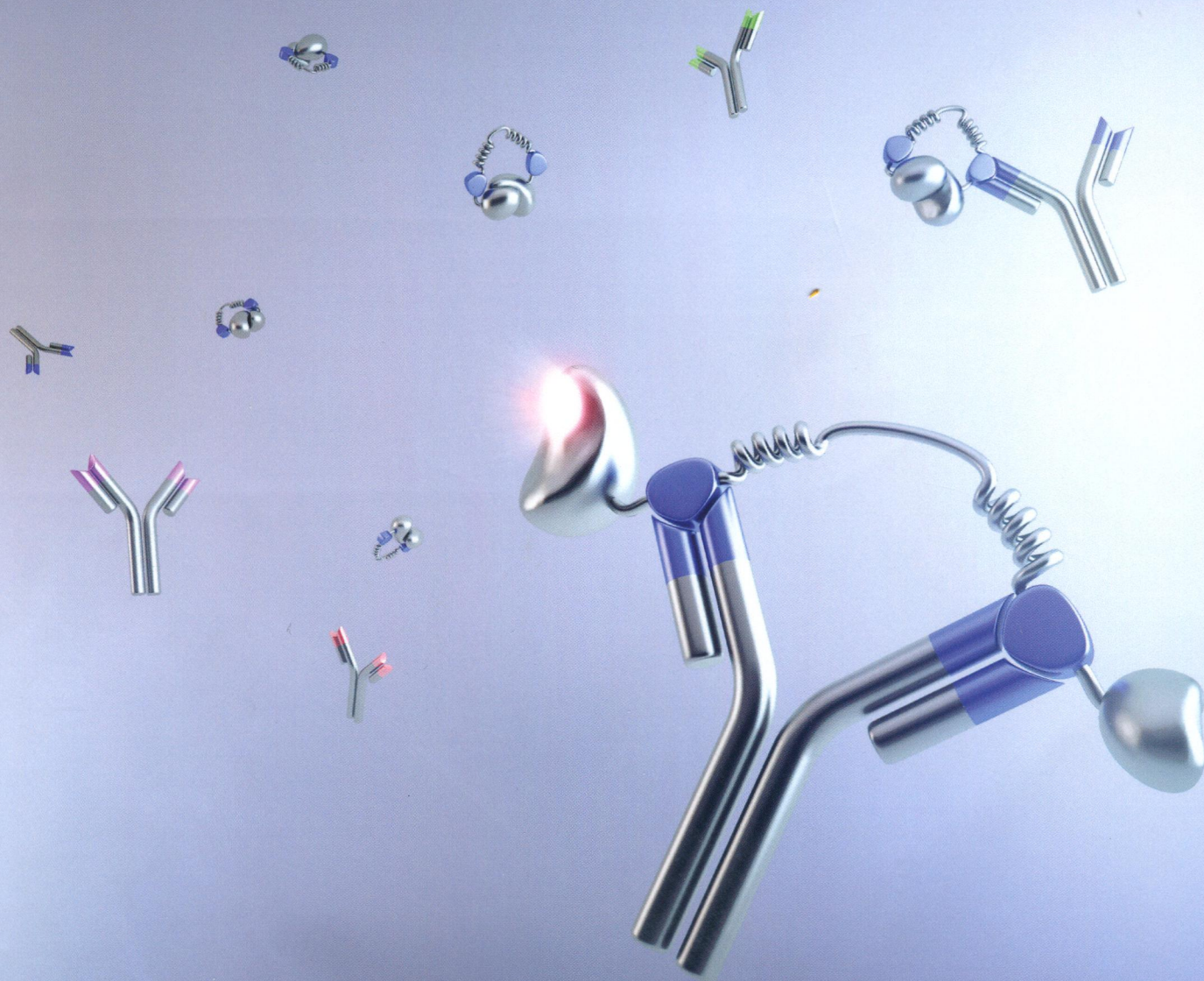


114
0-42/6

Organic & Biomolecular Chemistry

www.rsc.org/obc

Volume 11 | Number 44 | 28 November 2013 | Pages 7633–7804



ISSN 1477-0520

RSC Publishing

PERSPECTIVE

Maarten Merkx *et al.*

No washing, less waiting: engineering biomolecular reporters for single-step antibody detection in solution



1477-0520 (2013) 11:44;1-3

Organic & Biomolecular Chemistry

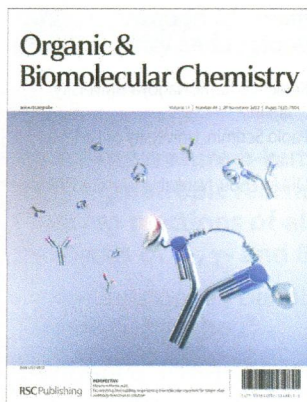
An international journal of synthetic, physical and biomolecular organic chemistry

www.rsc.org/obc

RSC Publishing is a not-for-profit publisher and a division of the Royal Society of Chemistry. Any surplus made is used to support charitable activities aimed at advancing the chemical sciences. Full details are available from www.rsc.org

IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 11(44) 7633–7804 (2013)

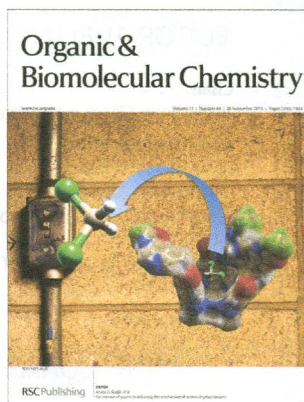


Cover

See Maarten Merkx *et al.*,
pp. 7642–7649.

Artwork produced by ICMS
Animation Studio, TU/e

Image reproduced by permission
of Maarten Merkx from
Org. Biomol. Chem., 2013, **11**,
7642.



Inside cover

See Jovica D. Badjić *et al.*,
pp. 7667–7675.

Image reproduced by permission
of Jovica D. Badjić from
Org. Biomol. Chem., 2013, **11**,
7667.

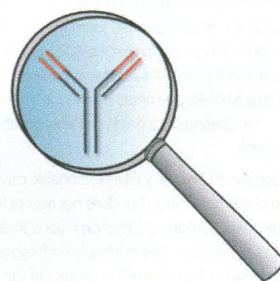
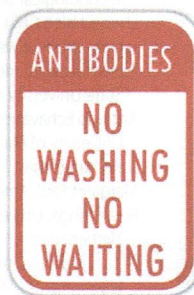
PERSPECTIVE

7642

No washing, less waiting: engineering biomolecular reporters for single-step antibody detection in solution

Sambashiva Banala, Remco Arts, Stijn J. A. Aper and
Maarten Merkx*

New antibody sensor strategies are discussed that
integrate molecular recognition and signal generation
within a single biomolecular reporter.



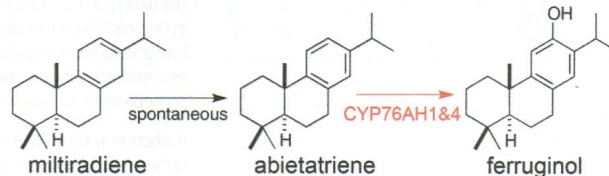
COMMUNICATIONS

7650

Characterization of CYP76AH4 clarifies phenolic diterpenoid biosynthesis in the Lamiaceae

Jiachen Zi and Reuben J. Peters*

Cytochrome P450 CYP76AH sub-family members simply
catalyze the hydroxylation of abietatriene, and do not
aromatize miltiradiene as previously suggested.

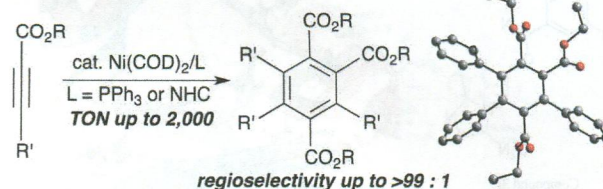


7653

Efficient and regioselective nickel-catalyzed [2 + 2 + 2] cyclotrimerization of ynoates and related alkynes

Sanjeewa K. Rodrigo, Israel V. Powell, Michael G. Coleman,* Jeanette A. Krause and Hairong Guan*

A mixture of Ni(COD)₂ and PPh₃ (or NHC) catalyzes cyclotrimerization of ynoates and related alkynes with high efficiency and regioselectivity.

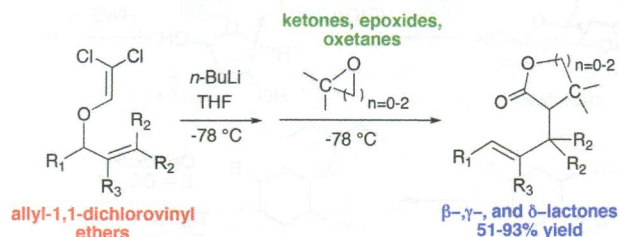


7658

Low temperature *n*-butyllithium-induced [3,3]-sigmatropic rearrangement/electrophile trapping reactions of allyl-1,1-dichlorovinyl ethers. Synthesis of β-, γ- and δ-lactones

Aaron Christopher, Dahniel Brandes, Stephen Kelly and Thomas G. Minehan*

Treatment of allyl-1,1-dichlorovinyl ethers with *n*-BuLi at -78 °C, followed by quenching with ketones, epoxides, and oxetanes, leads to highly substituted β-, γ-, and δ-lactones in good to excellent yields.

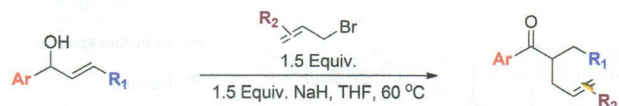


7662

NaH mediated isomerisation-allylation reaction of 1,3-substituted propenols

Adam J. S. Johnston, Mark G. McLaughlin, Jolene P. Reid and Matthew J. Cook*

A base mediated isomerisation-allylation protocol of 1,3-disubstituted propenols has been established. The use of diaryl and aryl-silyl substrates is reported alongside the use of substituted allyl bromides.



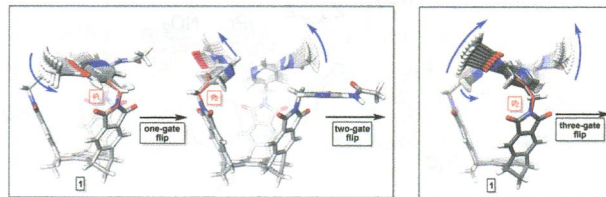
PAPERS

7667

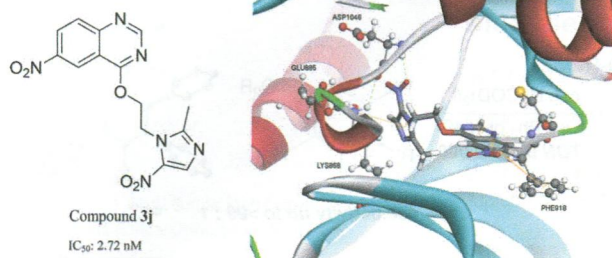
On the role of guests in enforcing the mechanism of action of gated baskets

Yian Ruan, Bao-Yu Wang, Jeremy M. Erb, Shigui Chen, Christopher M. Hadad and Jovica D. Badjić*

We designed and prepared a spacious and gated basket of type 2 ($V = 318 \text{ \AA}^3$) in ten synthetic steps.



7676

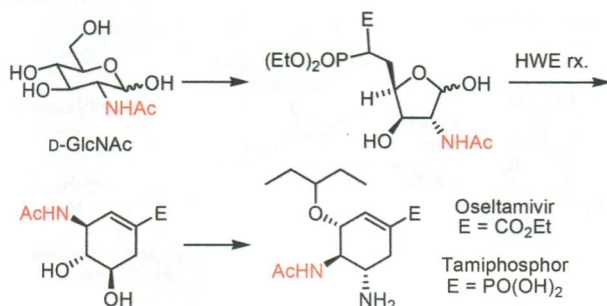


Design, synthesis, biological evaluation, and molecular modeling study of 4-alkoxyquinazoline derivatives as potential VEGFR2 kinase inhibitors

Jian Sun, Dong-Dong Li, Jing-Ran Li, Fei Fang, Qian-Ru Du, Yong Qian and Hai-Liang Zhu*

Twenty novel 4-alkoxyquinazoline derivatives have been designed and evaluated for their anticancer and VEGFR2 inhibitory activity. Of these compounds, compound **3j** demonstrated the most potent inhibitory activity.

7687

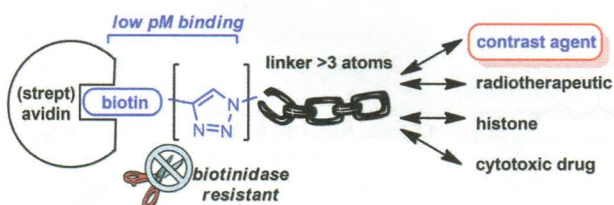


Synthesis of oseltamivir and tamiphosphor from *N*-acetyl- β -glucosamine

Chih-An Chen and Jim-Min Fang*

Anti-influenza drugs oseltamivir and tamiphosphor were synthesized from *N*-acetyl- β -glucosamine via intramolecular Horner-Wadsworth-Emmons reaction to construct the highly functionalized cyclohexene ring.

7700

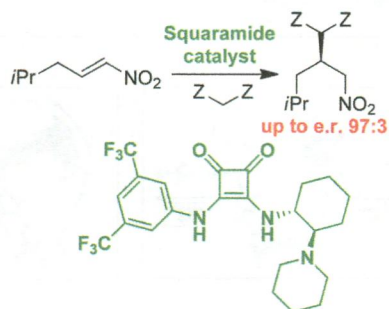


Triazole biotin: a tight-binding biotinidase-resistant conjugate

Anne I. Germeroth, Jill R. Hanna, Rehana Karim, Franziska Kundel, Jonathan Lowther, Peter G. N. Neate, Elizabeth A. Blackburn, Martin A. Wear, Dominic J. Campopiano and Alison N. Hulme*

Replacing the biotin amide bond with a triazole gives biotinidase-resistant conjugates with the strongest known binding to avidin.

7705



Enantioselective Michael addition of 1,3-dicarbonyl compounds to a nitroalkene catalyzed by chiral squaramides – a key step in the synthesis of pregabalin

Rastislav Baran, Eva Veverková, Andrea Škvorcová and Radovan Šebesta*

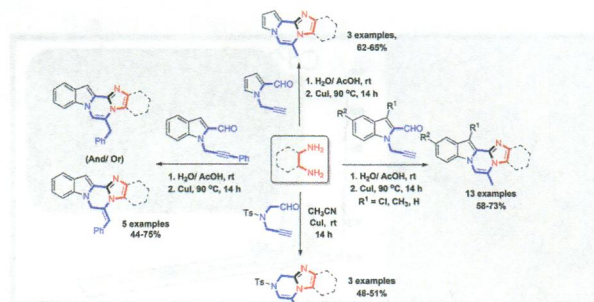
Pregabalin was synthesized in three steps via squaramide-catalysed Michael addition of Meldrum's acid to a nitroalkene.

7712

Copper catalyzed synthesis of fused benzimidazopyrazine derivatives via tandem benzimidazole formation/annulation of δ -alkynyl aldehyde

Subburethinam Ramesh, Suman Kr Ghosh and Rajagopal Nagarajan*

A novel route to synthesize the biologically active benzimidazopyrazine core is outlined.

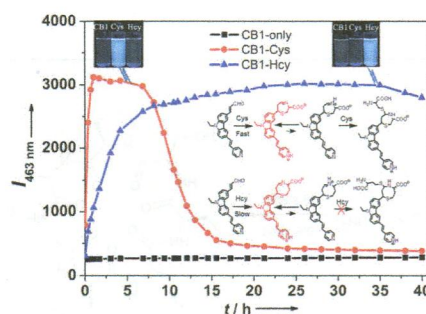


7721

Lighting up cysteine and homocysteine in sequence based on the kinetic difference of the cyclization/addition reaction

Fuqiang Guo, Minggang Tian, Fang Miao, Weijia Zhang, Guofen Song, Yong Liu, Xiaoqiang Yu,* Jing Zhi Sun* and Wai-Yeung Wong*

A one- and two-photon fluorescent probe was developed for discriminating cysteine and homocysteine in sequence with high selectivity.

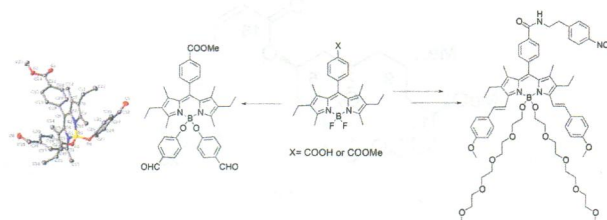


7729

Boron functionalization of BODIPY by various alcohols and phenols

Bertrand Brizet, Claire Bernhard, Yulia Volkova, Yoann Rousselin, Pierre D. Harvey, Christine Goze* and Franck Denat*

The synthesis of new B–O BODIPY derivatives functionalized with different alkoxy or arylalkoxy groups is reported. Water-soluble dyes could be synthesized by the introduction of PEG groups, as well as blue BODIPY derivatives emitting in the near infrared region.

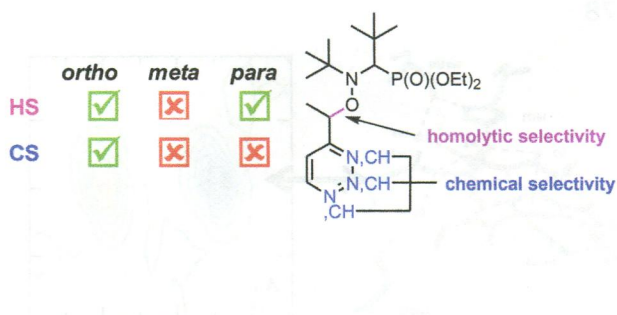


7738

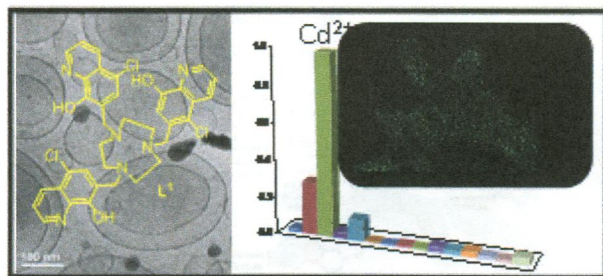
Chemically triggered C–ON bond homolysis in alkoxyamines: regioselectivity and chemoselectivity

G rard Audran,* Paul Br mond,* Matisse Bim Batsiandzy Ibanou, Sylvain R. A. Marque,* Val rie Roubaud and Didier Siri

Selective C–ON bond homolysis depending both on the position (regioselectivity) and on the mode of activation (chemoselectivity).



7751

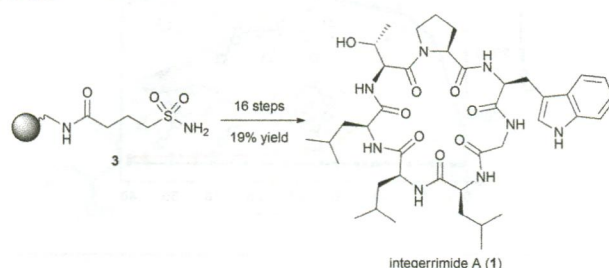


An OFF–ON chemosensor for biological and environmental applications: sensing Cd^{2+} in water using catanionic vesicles and in living cells

A. Bencini, F. Caddeo, C. Caltagirone,* A. Garau, M. B. Hurstouse, F. Isaia, S. Lampis, V. Lippolis, F. Lopez, V. Meli, M. Monduzzi, M. C. Mostallino, S. Murgia,* S. Puccioni, J. Schmidt, P. P. Secci and Y. Talmon

A new OFF–ON fluorescent chemosensor (L^1) is able to recognize Cd^{2+} in 1 : 1 MeCN– H_2O (v/v), in pure water, after inclusion within catanionic vesicles, and living cells.

7760

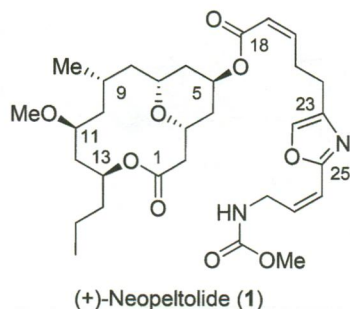


Synthesis of integerrimide A by an on-resin tandem Fmoc-deprotection–macrocyclisation approach

Sirirat Kumarn,* Nitirat Chimnoi and Somsak Ruchirawat

A solid-phase total synthesis of integerrimide A employing a safety-catch linker via a new tandem approach to direct macrocyclisation is reported.

7768

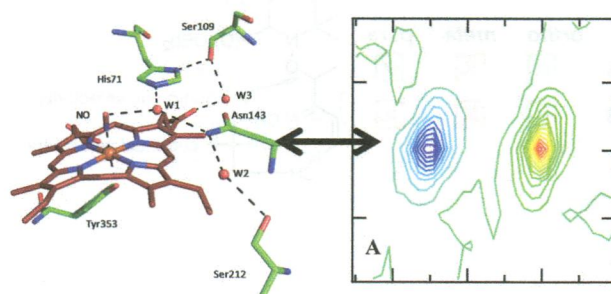


Enantioselective total synthesis of macrolide (+)-neopeltolide

Arun K. Ghosh,* Khriesto A. Shurrush and Zachary L. Dawson

An enantioselective total synthesis of anti-proliferative agent (+)-neopeltolide is described.

7778



A structural and dynamic investigation of the inhibition of catalase by nitric oxide

Marco Candelaesi, Andrea Gumiero, Katrin Adamczyk, Kirsty Robb, César Bellota-Antón, Vartul Sangal, John Munnoch, Gregory M. Greetham, Michael Towrie, Paul A. Hoskisson, Anthony W. Parker, Nicholas P. Tucker, Martin A. Walsh and Neil T. Hunt*

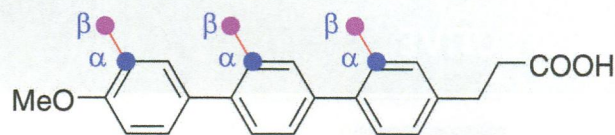
A multidisciplinary study combining 2D-IR spectroscopy and X-ray crystallography suggests an important role for bound water in catalase structural dynamics.

7789

Evaluating minimalist mimics by exploring key orientations on secondary structures (EKOS)

Dongyue Xin, Eunhwa Ko, Lisa M. Perez,
Thomas R. Ioerger and Kevin Burgess*

Peptide mimics that display amino acid side-chains on semi-rigid scaffolds (not peptide polyamides) can be referred to as minimalist mimics.



minimalist helical mimics

does it match $i, i + 4, i + 7, i, i + 2, i + 5$
or some other secondary structure?