Organic & Biomolecular Chemistry

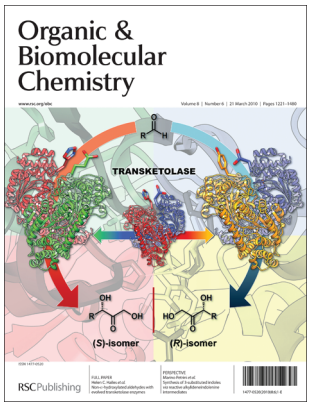
An international journal of synthetic, physical and biomolecular organic chemistry

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

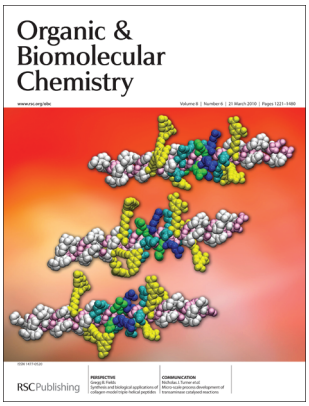
ISSN 1477-0520 CODEN OBCRAK 8(6) 1221–1480 (2010)



Cover

See Helen C. Hailes *et al.*, pp. 1301–1309.
Single-point active site transketolase mutants enhanced and reversed the stereoselectivity of the wild-type enzyme in the conversion of linear and cyclic aliphatic aldehydes to α,α′-dihydroxyketones.

Image reproduced by permission of Helen C. Hailes from *Org. Biomol. Chem.*, 2010, **8**, 1301.

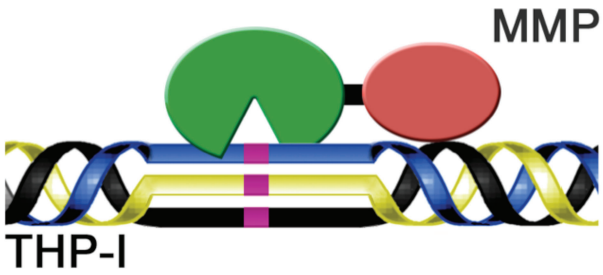


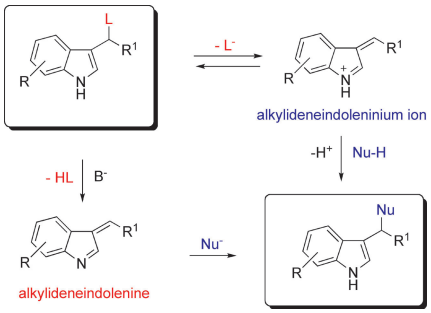
Inside cover

See Gregg B. Fields, pp. 1237–1258.
Dr Fields' research interests are in the use of chemical approaches to better understand how protein three-dimensional structures influence cellular and enzymatic behaviours.

Image reproduced by permission of Gregg B. Fields from *Org. Biomol. Chem.*, 2010, **8**, 1237.

PERSPECTIVES





Organic & Biomolecular Chemistry (print: ISSN 1477-0520; electronic: ISSN 1477-0539) is published 24 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF. All orders, with cheques made payable to the Royal Society of Chemistry, should be sent to RSC Distribution Services, c/o Portland Customer Services, Commerce Way, Colchester, Essex, UK CO2 8HP. Tel +44 (0)1206 226050; E-mail sales@rscdistribution.org

2010 Annual (print+electronic) subscription price: £3105; US$5796. 2010 Annual (electronic) subscription price: £2794; US$5216 Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version only will be charged VAT. If you take an institutional subscription to any RSC journal you are entitled to free, site-wide web access to that journal. You can arrange access via Internet Protocol (IP) address at www.rsc.org/ip. Customers should make payments by cheque in sterling payable on a UK clearing bank or in US dollars payable on a US clearing bank. Periodicals postage paid at Rahway, NJ, USA and at additional mailing offices. Airfreight and mailing in the USA by Mercury Airfreight International Ltd., 365 Blair Road, Avenel, NJ 07001, USA.

US Postmaster: send address changes to Organic & Biomolecular Chemistry (OBC) c/o Mercury Airfreight International Ltd., 365 Blair Road, Avenel, NJ 07001. All despatches outside the UK by Consolidated Airfreight.

Organic & Biomolecular Chemistry

An international journal of synthetic, physical and biomolecular organic chemistry

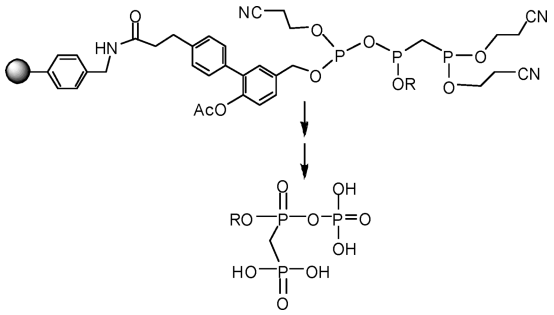
www.rsc.org/obc

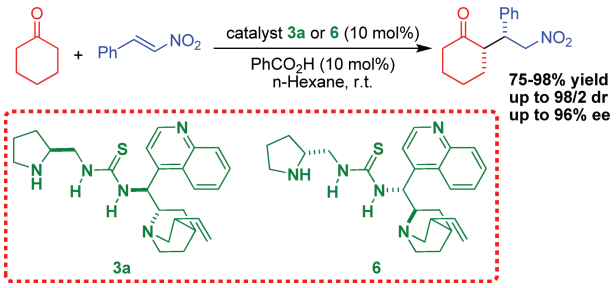
Organic & Biomolecular Chemistry brings together molecular design, synthesis, structure, function and reactivity in one journal. It publishes fundamental work on synthetic, physical and biomolecular organic chemistry as well as all organic aspects of: chemical biology, medicinal chemistry, natural product chemistry, supramolecular chemistry, macromolecular chemistry, theoretical chemistry, and catalysis.

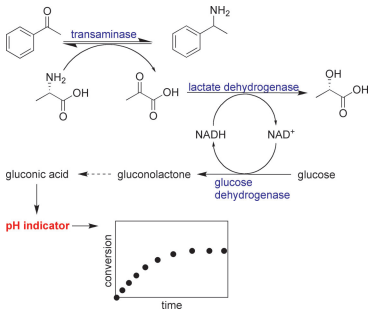
INFORMATION FOR AUTHORS

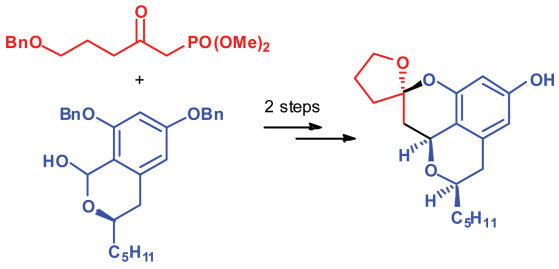
Full details on how to submit material for publication in Organic & Biomolecular Chemistry are given in the Instructions for Authors (available from http://www.rsc.org/authors). Submissions should be made *via* the journal's homepage: http://www.rsc.org/obc.

Authors may reproduce/republish portions of their published contribution without seeking permission from the RSC, provided that any such republication is accompanied by an acknowledgement in the form: (Original Citation)–Reproduced by permission of The Royal Society of Chemistry.

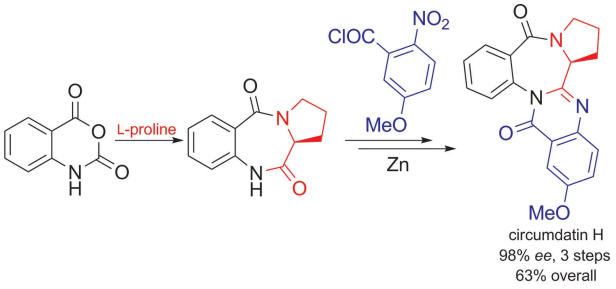








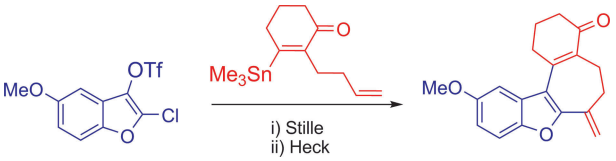
COMMUNICATIONS



A concise synthesis of enantiopure circumdatins E, H and J

Paul E. Zhichkin,* Xiaomin Jin, Honglu Zhang, Lisa H. Peterson, Catherine Ramirez, Tara M. Snyder and Hilde S. Burton

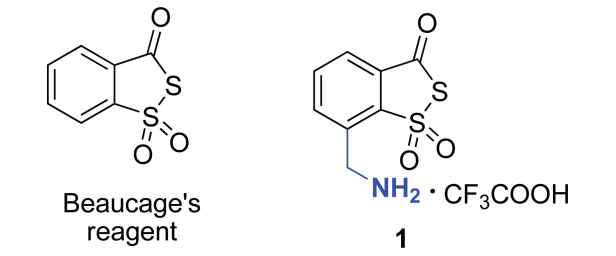
Enantiopure circumdatins E, H and J were prepared in 3 steps from isatoic anhydrides, L-proline and 2-nitrobenzoic acids.



An efficient synthesis of (±)-frondosin B using a Stille–Heck reaction sequence

Kye-Simeon Masters and Bernard L. Flynn*

An efficient synthesis of (±)-frondosin B (34% overall yield) has been developed based on the application of a Stille–Heck reaction sequence of 2-chloro-5-methoxybenzo[*b*]furan-3-yl triflate and 2-(3-butenyl)-3-(trimethylstannyl)cyclohex-2-enone.

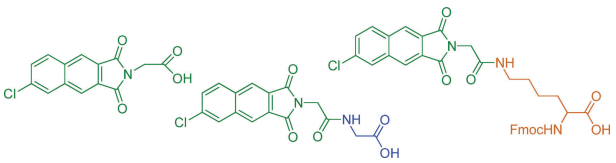


Thiol-dependent DNA cleavage by aminomethylated Beaucage's reagent

Jiahui Zheng, Xiaoqian Liu, Qing Yuan, Yoon-Joo Shin, Daekyu Sun and Yixin Lu*

Aminomethylated Beaucage's reagent **1** was found to be more potent than Beaucage's reagent in causing DNA cleavage. This study demonstrated the importance of the amino functionality in enhancing DNA-cleaving activities, and such findings may facilitate development of novel sulfur-containing DNA-cleaving molecules in cancer therapy.

PAPERS



Synthesis and fluorescence of the new environment-sensitive fluorophore 6-chloro-2,3-naphthalimide derivative

Alan R. Katritzky,* Sevil Ozcan and Ekaterina Todadze

Convenient and efficient synthesis of a novel environmentally sensitive chlorine substituted naphthalimide-based fluorophore which can be utilized for the labeling of amino acids is described.

BOSS XII

12th Belgian Organic Synthesis Symposium

University of Namur (FUNDP), Auditorium Pedro Arrupe — **July 11>16, 2010, Namur, Belgium**

The symposium will include:

> a One-day course delivered by **Prof. David MacMillan (Princeton University, Princeton, New Jersey, USA)**, the recipient of the Tetrahedron Chair
> a series of 16 plenary lectures
> a lecture delivered by the recipient of the Janssen Pharmaceutica Prize for Creativity in Organic Synthesis, **Prof. Eric M. Jacobsen (Harvard University, Cambridge, MA, United States)**
> poster sessions
> an exhibition
> social activities

Janssen Pharmaceutica Prize for Creativity in Organic Synthesis

Prof. Eric M. Jacobsen (Harvard University, Cambridge, MA, USA) has been designated by the Jury as the winner of the 2010 'Janssen Pharmaceutica Prize for Creativity in Organic Chemistry', established in order to honour Dr. Paul Janssen, founder of Janssen Pharmaceutica.

Registration & Abstracts Submission

www.BOSS12.org

DALTON DIVISION AND ORGANIC DIVISION

Dalton Discussion 12:
Catalytic C-H and C-X Bond Activation

13 - 15 September 2010
Durham University, UK
www.rsc.org/DD12

Call for posters now open

Organised jointly by the Dalton Division and Organic Division, DD12 will bring together the organic, organometallic and inorganic (coordination chemistry) communities from academia and industry to discuss the current state of the art, the development and future of late metal-catalysed cross-coupling strategies involving C-X and/or C-H bonds.

The meeting will highlight the importance of catalytic bond activation in cross-coupling chemistry. The latest research will be presented and discussed.

Topics

- Synthetic chemistry (including applications)
- Inorganic and organometallic chemistry
- Reaction mechanism (physical organic and organometallic chemistry)
- Transition metal catalysis
- Applications of C-H and C-X bond activation in organic synthesis

Keynote speakers

Jennifer Love
The University of British Columbia, Canada

William D. Jones
University of Rochester, USA

Aiwen Lei
Wuhan University, China

Zhang-jie Shi
Peking University, China

Invited speakers

Robin Bedford
University of Bristol, UK

John M. Brown
University of Oxford, UK

Stuart Macgregor
Heriot-Watt University, Edinburgh, UK

Hans de Vries
DSM Pharmaceutical Products, The Netherlands

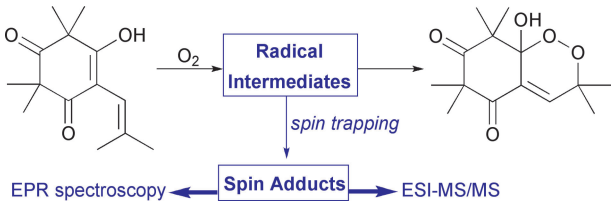
Offers of contributed papers related to the listed themes for poster presentation are invited by 16 July 2010.
Visit **www.rsc.org/DD12** for further information.

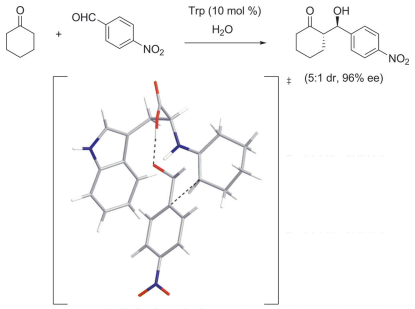
Registration will open in spring 2010.

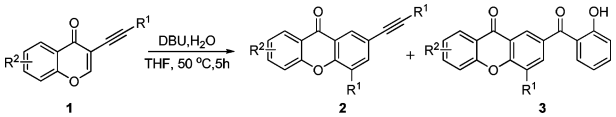
RSC | Advancing the Chemical Sciences

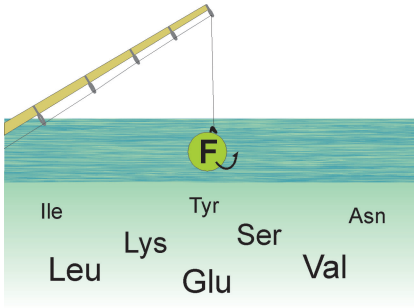
www.rsc.org/DD12

Registered Charity Number 207890









A new journal from RSC Publishing
Launching mid 2010

Rapid communication of research in medicinal chemistry

MedChemComm

Official journal of:

EFMC
European Federation for Medicinal Chemistry

A new, peer-reviewed journal publishing medicinal chemistry research, including new studies related to biologically-active chemical or biochemical entities that can act as pharmacological agents with therapeutic potential or relevance.

The journal will publish monthly issues from mid 2010 and will contain a mix of vibrant and concise research and review articles. *MedChemComm* will complement the existing RSC Publishing portfolio of bioscience journals, providing authors in the field with a dedicated subject-specific publication.

From launch, the current issue of *MedChemComm* will be freely available to all readers via the website. Free institutional online access to all 2010/2011 content will be available following a simple registration process at www.rsc.org/medchemcomm_registration

Co-Editor-in-Chief: **Dr Anthony Wood**, Pfizer, UK

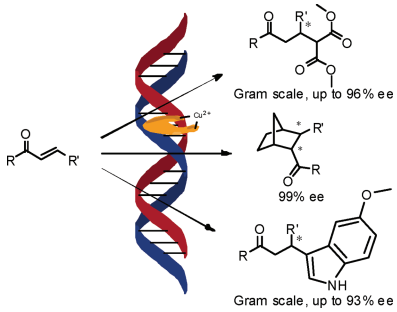
Co-Editor-in-Chief: **Professor Gregory Verdine**, Harvard University, USA

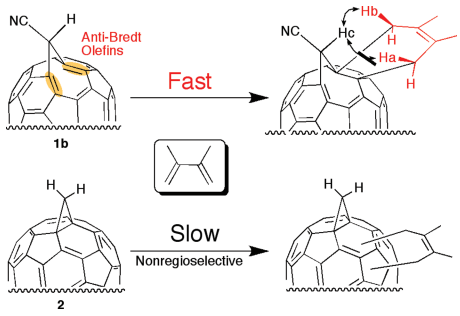
Sign up for free access today!

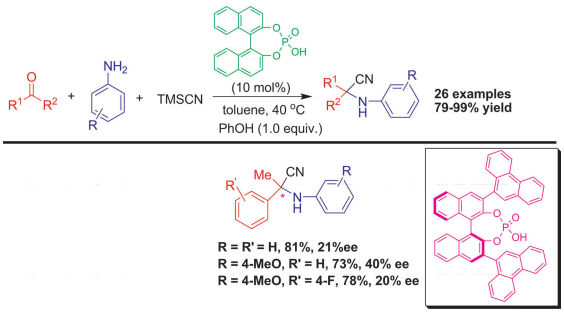
RSC Publishing

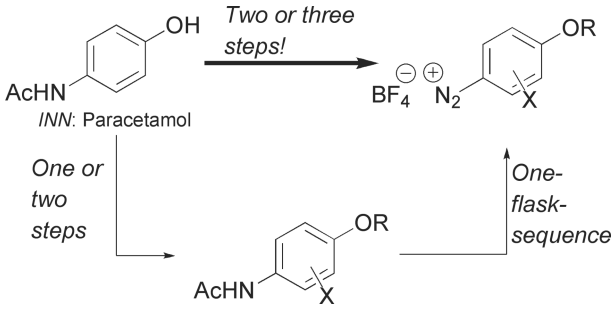
www.rsc.org/medchemcomm

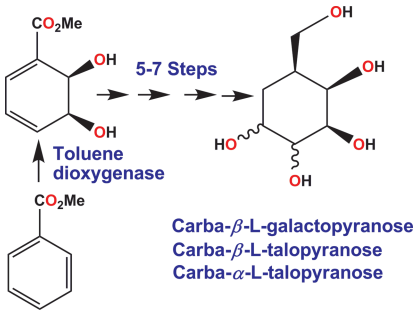
Registered Charity Number 207890







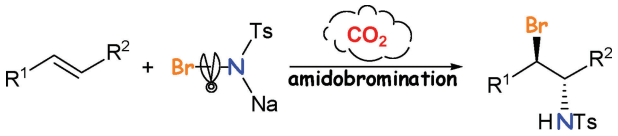




Chemoenzymatic synthesis of the carbasugars carba-β-L-galactopyranose, carba-β-L-talopyranose and carba-α-L-talopyranose from methyl benzoate

Derek R. Boyd,* Narain D. Sharma, Nigel I. Bowers, Gerard B. Coen, John F. Malone, Colin R. O'Dowd, Paul J. Stevenson and Christopher C. R. Allen

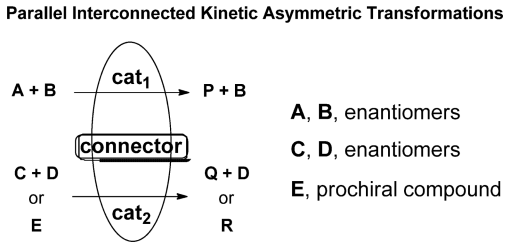
The *cis*-dihydrodiol metabolite from methyl benzoate has been used as a synthetic precursor of carba-β-L-galactopyranose, carba-β-L-talopyranose, carba-α-L-talopyranose and carba-β-L-galactopyranose.



CO_2-induced amidobromination of olefins with bromamine-T

Junpei Hayakawa, Mitsuhiro Kuzuhara and Satoshi Minakata*

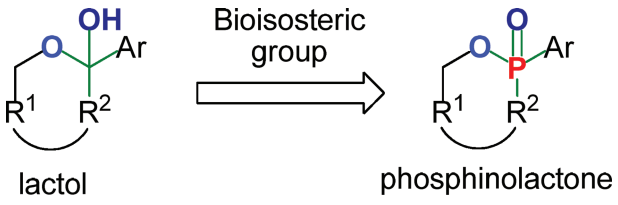
The carbon dioxide (CO_2)-induced amidobromination of olefins with bromamine-T is described. The method can be used in reactions with a wide range of olefins, leading to the regioselective formation of amidobrominated compounds.



Biocatalysed concurrent production of enantioenriched compounds through parallel interconnected kinetic asymmetric transformations

Ana Rioz-Martínez, Fabricio R. Bisogno, Cristina Rodríguez, Gonzalo de Gonzalo, Iván Lavandera, Daniel E. Torres Pazmiño, Marco W. Fraaije and Vicente Gotor*

Examples of *parallel interconnected kinetic asymmetric transformations* are presented. In a *one-pot* reaction using two biocatalysts, optically active ketones, sulfoxides and *sec*-alcohols could *concurrently* be achieved in a strict *parallel* fashion.



Drug discovery: phosphinolactone, *in vivo* bioisostere of the lactol group

Jean-Noël Volle,* Damien Filippini, Bartlomiej Krawczy, Nikolay Kaloyanov, Arie Van der Lee, Tangui Maurice, Jean-Luc Pirat and David Virieux*

In drug discovery, structural modifications over the lead molecule are often crucial for the development of a drug. Herein, we reported the first *in vivo* bioisosteric effect of phosphinolactone function in relation to the lactol group constituting the bioactive molecule: Hydroxybupropion.

AUTHOR INDEX

FREE E-MAIL ALERTS AND RSS FEEDS

Contents lists in advance of publication are available on the web *via* www.rsc.org/obc – or take advantage of our free e-mail alerting service (www.rsc.org/ej_alert) to receive notification each time a new list becomes available.

Try our RSS feeds for up-to-the-minute news of the latest research. By setting up RSS feeds, preferably using feed reader software, you can be alerted to the latest Advance Articles published on the RSC web site. Visit www.rsc.org/publishing/technology/rss.asp for details.

ADVANCE ARTICLES AND ELECTRONIC JOURNAL

Free site-wide access to Advance Articles and the electronic form of this journal is provided with a full-rate institutional subscription. See www.rsc.org/ejs for more information.

* Indicates the author for correspondence: see article for details.

Electronic supplementary information (ESI) is available *via* the online article (see http://www.rsc.org/esi for general information about ESI).