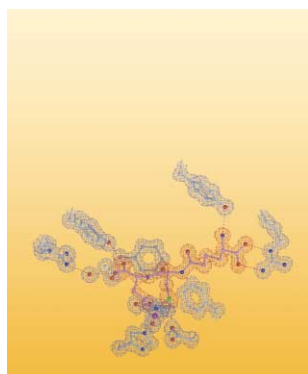


Organic & Biomolecular Chemistry

FORMERLY PERKIN TRANSACTIONS 1 AND 2

Incorporating Acta Chemica Scandinavica

**Cover**

See J. M. Elkins, P. J. Rutledge, N. I. Burzlaff,
I. J. Clifton, R. M. Adlington, P. L. Roach and
J. E. Baldwin, page 1455
The active site of isopenicillin N synthase with an
unsaturated substrate analogue.



Chemical biology articles published
in this journal also appear in the
Chemical Biology Virtual Journal:
www.rsc.org/chembiol

contents

PROFILE

xi

xii

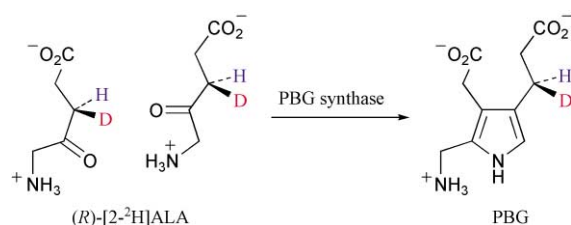


Profile: *Organic & Biomolecular Chemistry* profiles
Professor Andrew D. Hamilton

COMMUNICATIONS

1443

1446



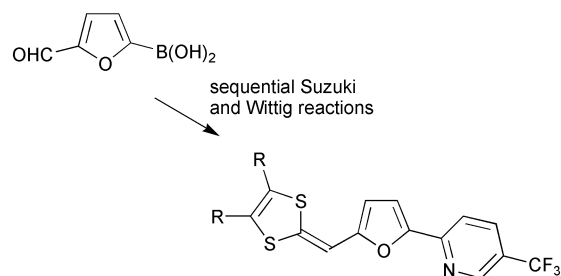
Stereochemistry and mechanism of the conversion of 5-aminolaevulinic acid into porphobilinogen catalysed by porphobilinogen synthase

Catherine E. Goodwin and Finian J. Leeper

(R)-[2-²H]ALA shows a much larger isotope effect than the (S)-isomer; a detailed mechanism is proposed based on this stereochemistry and crystal structures.



1447 1449



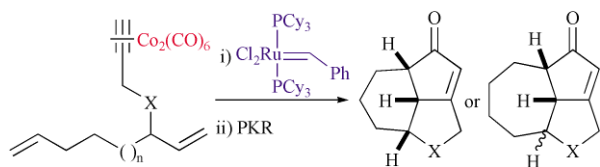
5-Formyl-2-furylboronic acid as a versatile bifunctional reagent for the synthesis of π -extended heteroarylfuran systems

Paul R. Parry, Martin R. Bryce and Brian Tarbit

5-Formyl-2-furylboronic acid reacts cleanly with a range of heteroaryl bromides under Suzuki–Miyaura cross-coupling conditions to produce 2-formyl-5-heteroarylfuran derivatives. Subsequent Wittig olefination reactions afford π -conjugated alkene–pyridyl–furan derivatives.



1450 1451

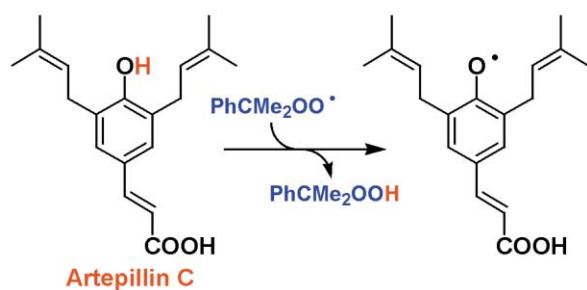


Tandem RCM–Pauson–Khand reaction for access to tricycles in one step

Marta Rosillo, Luis Casarrubios, Gema Domínguez and Javier Pérez-Castells

Only one step is used to obtain tricyclic structures by means of a tandem RCM and Pauson–Khand reaction.

1452 1454



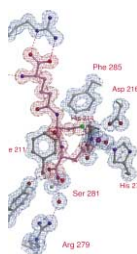
Efficient radical scavenging ability of artepillin C, a major component of Brazilian propolis, and the mechanism

Ikuo Nakanishi, Yoshihiro Uto, Kei Ohkubo, Kentaro Miyazaki, Haruko Yakumaru, Shiro Urano, Haruhiro Okuda, Jun-Ichi Ueda, Toshihiko Ozawa, Kiyoshi Fukuhara, Shunichi Fukuzumi, Hideko Nagasawa, Hitoshi Hori and Nobuo Ikota

Artepillin C, a major component of Brazilian propolis, can scavenge cumylperoxy radical *via* a one-step hydrogen atom transfer mechanism at a rate comparable to that of (+)-catechin.

ARTICLES

1455 1460

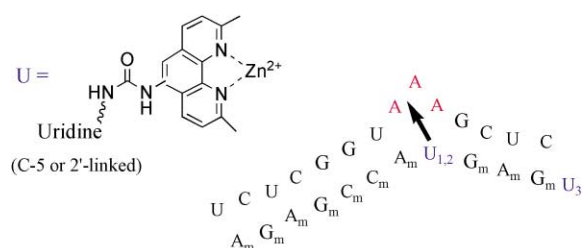


Crystallographic studies on the reaction of isopenicillin N synthase with an unsaturated substrate analogue

Jonathan M. Elkins, Peter J. Rutledge, Nicolai I. Burzlaff, Ian J. Clifton, Robert M. Adlington, Peter L. Roach and Jack E. Baldwin

A pseudo-time-resolved strategy is used to follow the reaction of isopenicillin N synthase with an unsaturated substrate analogue in the crystalline state.

1461 1465



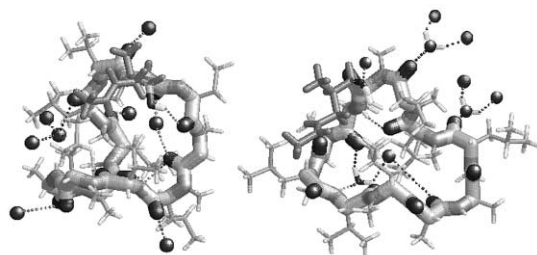
Oligonucleotide based artificial nuclease (OBAN) systems. Bulge size dependence and positioning of catalytic group in cleavage of RNA-bulges

Hans Åström, Nicholas H. Williams and Roger Strömberg

OBAN cleavage of bulge-forming oligoribonucleotides display different bulge size preferences for different linker positions, turnover and Michaelis–Menten behaviour.



1466 1474



Cyclosporin H (CsH)

Cyclosporin G (CsG)

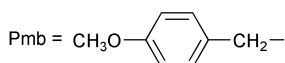
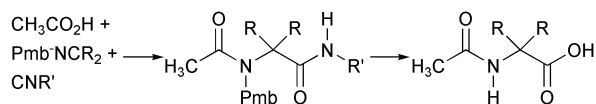
Two new cyclosporin folds observed in the structures of the immunosuppressant cyclosporin G and the formyl peptide receptor antagonist cyclosporin H at ultra-high resolution

Brian Potter, Rex A. Palmer, Robert Withnall, Terence C. Jenkins and Babur Z. Chowdhry

The detailed structures of the immunosuppressant cyclosporin G and the formyl peptide receptor antagonist cyclosporin H are presented.



1475 1479



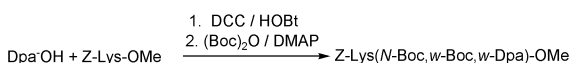
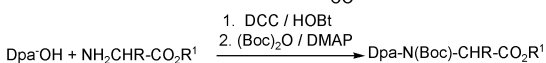
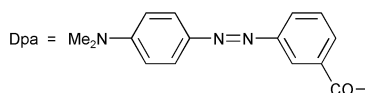
An improved approach for the synthesis of α,α -dialkyl glycine derivatives by the Ugi–Passerini reaction

Susana P. G. Costa, Hernâni L. S. Maia and Sílvia M. M. A. Pereira-Lima

General strategy for routine synthesis of bulky α,α -dialkyl glycines by the Ugi–Passerini reaction.



1480 1485



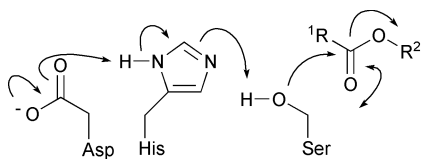
Development of a temporary marker for peptides

M. Sameiro T. Gonçalves and Hernâni L. S. Maia

Labelling of amino acid esters followed by investigation of the conditions of cleavage of the chromophore by nucleophiles or electrolysis.



1486 1497

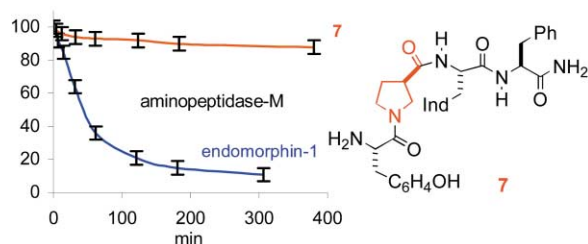


Synthesis and hydrolysis studies of a peptide containing the reactive triad of serine proteases with an associated linker to a dye on a solid phase support

John M. Clough, Ray V. H. Jones, Hannah McCann, David J. Morris and Martin Wills

The synthesis of a model system to probe the capacity for a simple linear peptide incorporating the reactive triad to cleave ester bonds *via* intramolecular hydrolysis.

1498 1502



Stability against enzymatic hydrolysis of endomorphin-1 analogues containing β -proline

Giuliana Cardillo, Luca Gentilucci, Alessandra Tolomelli, Maria Calienni, Ahmed R. Qasem and Santi Spampinato

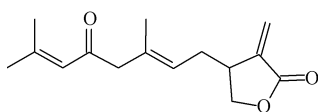
Endomorphin-1 analogues containing β -proline display good affinity towards μ -opioid receptors and enhanced stability against enzymatic hydrolysis.

1503 1508

Biosynthesis of anthecotuloide, an irregular sesquiterpene lactone from *Anthemis cotula* L. (Asteraceae) via a non-farnesyl diphosphate route

John van Klink, Hans Becker, Susannah Andersson and Wilhelm Boland

Stable isotope labelling studies have shown that anthecotuloide is biosynthesized from the head-to-head coupling of geranyl-PP with dimethylallyl-PP.

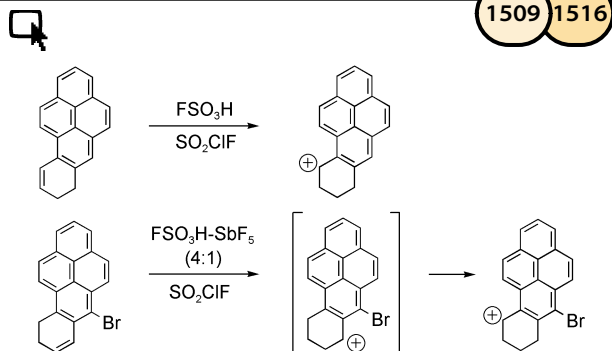


1509 1516

Stable ion study of benzo[*a*]pyrene (BaP) derivatives: 7,8-dihydro-BaP, 9,10-dihydro-BaP and its 6-halo derivatives, 1- and 3-methoxy-9,10-dihydro-BaP-7(8*H*)-one, as well as the proximate carcinogen BaP 7,8-dihydrodiol and its dibenzoate, combined with a comparative DNA binding study of regioisomeric (1-, 4-, 2-) pyrenylcarbinols

T. Okazaki, K. K. Laali, B. Zajc, M. K. Lakshman, S. Kumar, W. M. Baird and W.-M. Dashwood

A comparative stable ion and DNA binding study was conducted on a series of BaP derivatives.

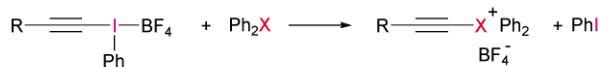


1517 1521

Synthesis of 1-alkynyl(diphenyl)onium salts of group 16 elements via heteroatom transfer reaction of 1-alkynyl(phenyl)-λ³-iodanes

Masahito Ochiai, Takema Nagaoka, Takuya Sueda, Jie Yan, Da-Wei Chen and Kazunori Miyamoto

1-Alkynyl(phenyl)-λ³-iodanes undergo selective transfer of the alkynyl groups onto diphenyl chalcogens to give 1-alkynyl-(diphenyl)sulfonium, -selenonium, and -telluronium salts.



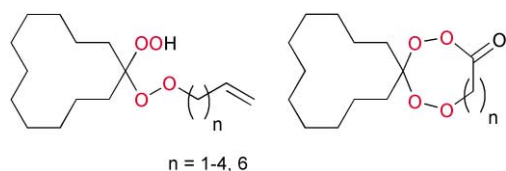
R = H, Me, ¹³C₈H₁₇, ⁱPr, ^tBu, Me₃Si, Ph
X = S, Se, Te

1522 1527

New approaches to the synthesis of spiro-peroxylactones

Kevin J. McCullough, Hidekazu Tokuhara, Araki Masuyama and Masatomo Nojima

(Alkenyldioxy)cyclododecyl hydroperoxides are transformed into peroxylactones via a two-step ozonolysis–dehydration (or oxidation) sequence.



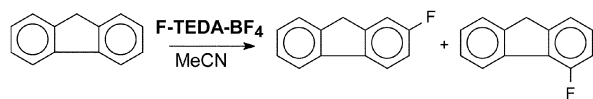
n = 1-4, 6

1528 1531

The role of geometry on regioselectivity and rate of fluorination of fluorene and diphenylmethane with Selectfluor™ F-TEDA-BF₄

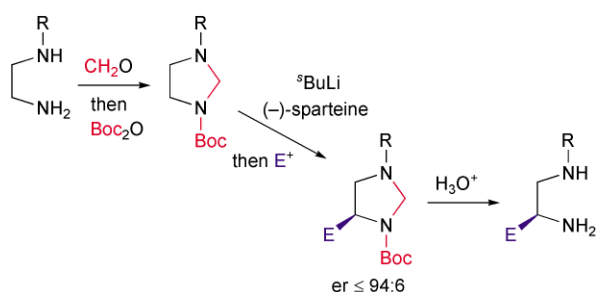
Jernej Iskra, Marko Zupan and Stojan Stavber

To study the direct introduction of fluorine into aromatic molecules, the reactions of diphenylmethane and fluorene with F-TEDA-BF₄ have been investigated.



$\frac{d[\text{F-TEDA}]}{dt} = k_2 x [\text{F-TEDA}] x [\text{fluorene}]$

1532 1544

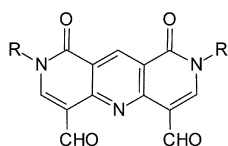


Preparation of diamines by lithiation–substitution of imidazolidines and pyrimidines

Neil J. Ashweek, Iain Coldham, Thomas F. N. Haxell and Steven Howard

Chiral 1,2-diamines have been prepared by cyclization to an imidazolidine, asymmetric lithiation then substitution, followed by hydrolysis.

1545 1551

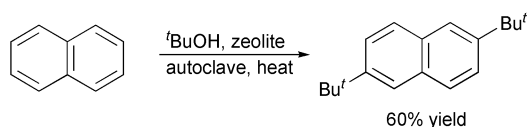


DOTTADs – readily made novel metal ligands with multivariant functionality

Andrea Arany, Otto Meth-Cohn and Miklós Nyerges

A general multi-purpose synthesis of a new class of heterocyclic ligands has been established.

1552 1559

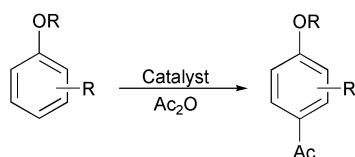


Study of regioselective dialkylation of naphthalene in the presence of reusable zeolite catalysts

Keith Smith, Simon D. Roberts and Gamal A. El-Hiti

Highly regioselective dialkylation of naphthalene has been achieved using an easily regenerated catalyst.

1560 1564

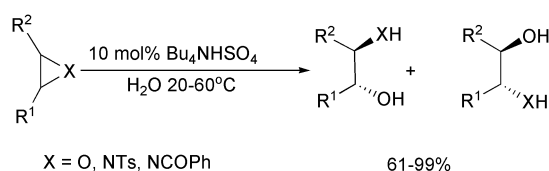


Acetylation of aromatic ethers using acetic anhydride over solid acid catalysts in a solvent-free system. Scope of the reaction for substituted ethers

Keith Smith, Gamal A. El-Hiti, Anthony J. Jayne and Michael Butters

Regioselective acetylation of aryl ethers under modest conditions is achieved with the help of zeolite catalysis.

1565 1567

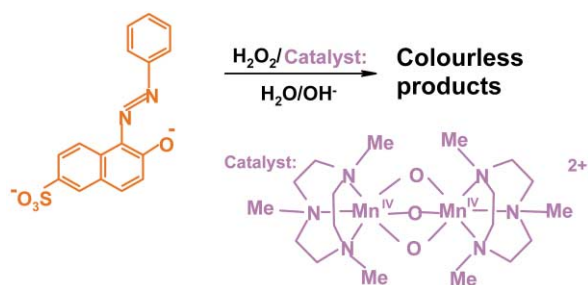


Tetrabutylammonium bisulfate: a new effective catalyst for the hydrolysis of aziridines or epoxides

Ren-Hua Fan and Xue-Long Hou

High yields of β -amino alcohols and 1,2-diols are afforded by Bu_4NHSO_4 -catalyzed ring-opening reaction of aziridines and epoxides with water.

1568 1577

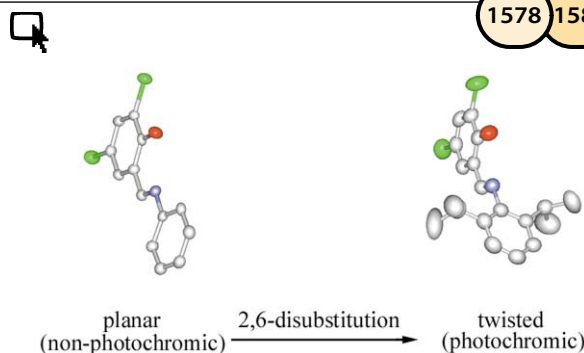


Azo dye oxidation with hydrogen peroxide catalysed by manganese 1,4,7-triazacyclononane complexes in aqueous solution

Bruce C. Gilbert, John R. Lindsay Smith, Maurice S. Newton, John Oakes and Roger Pons i Prats

A mechanism is presented for the bleaching of azonaphthol dyes with H_2O_2 catalysed by manganese 1,4,7-triazacyclononane complexes in aqueous solution.

1578 1583

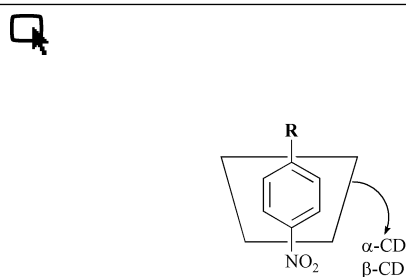


Crystalline photochromism of *N*-salicylidene-2,6-dialkylanilines: advantage of 2,6-dialkyl substituents of aniline for preparation of photochromic Schiff base crystals

Hisatane Fukuda, Kiichi Amimoto, Hiroyuki Koyama and Toshio Kawato

Alkyl substituents in *N*-(3,5-dihalosalicylidene)-2,6-dialkylanilines act as space openers in the crystals that exhibit photochromism.

1584 1590

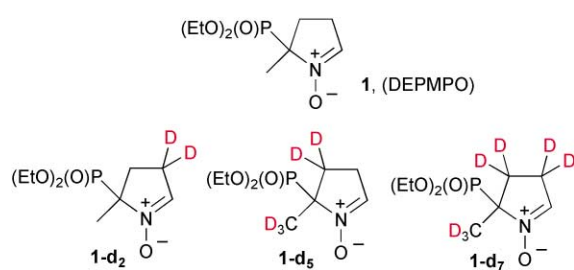


Spectrophotometric study on the thermodynamics of binding of α - and β -cyclodextrin towards some *p*-nitrobenzene derivatives

Paolo Lo Meo, Francesca D'Anna, Serena Riela, Michelangelo Gruttadauria and Renato Noto

The analysed hosts show different binding behaviour towards examined guests. For example, α CD also forms 1 : 2 complexes.

1591 1597

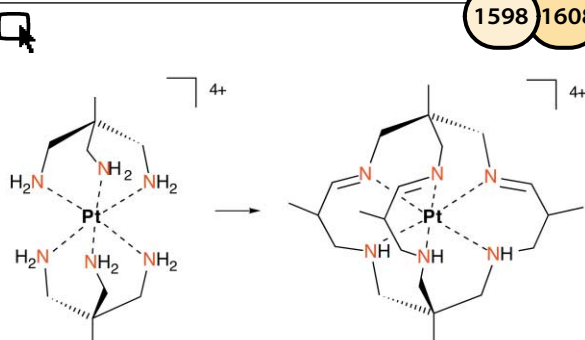


Deuterated analogues of the free radical trap DEPMPPO: synthesis and EPR studies

Jean-Louis Clément, Jean-Pierre Finet, Claudine Fréjaville and Paul Tordo

Three analogues of DEPMPPO (**1**) labelled with two (**1-d₂**), five (**1-d₅**) or seven (**1-d₇**) ^2H were synthesized and used to trap the *tert*-butylperoxyl radical.

1598 1608



Specificity in template syntheses of hexaaza-macrobicyclic cages: $[\text{Pt}(\text{Me}_5\text{-tricosatrieneN}_6)]^{4+}$ and $[\text{Pt}(\text{Me}_5\text{-tricosaneN}_6)]^{4+}$

Kylie N. Brown, Rodney J. Geue, Trevor W. Hambley, David C. R. Hockless, A. David Rae and Alan M. Sargeson

$[\text{Pt}(\text{tame})_2]^{4+}$ with formaldehyde and propanal stereospecifically yields a C_3 tri-imine cage complex $[\text{Pt}(\text{Me}_5\text{-tricosatrieneN}_6)]^{4+}$ which reduces with NaBH_4 to a C_3 saturated $[\text{Pt}(\text{Me}_5\text{-tricosaneN}_6)]^{4+}$ ion.



1609 1624

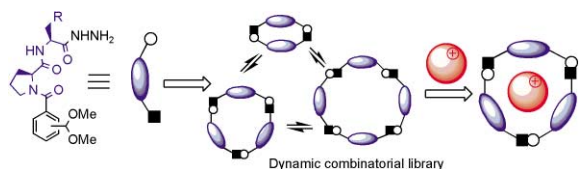
**Combinatorial organic materials research (COMR): design, synthesis and screening of a 225-membered materials library of liquid crystalline fluorinated *p*-quaterphenyls**

Oliver Deeg and Peter Bäuerle

The rapid solution phase synthesis of novel liquid crystalline materials is demonstrated by utilising combinatorial and parallel methods for the preparation of a library of 225 differently fluorinated 4,4''-dipropyl-*p*-quaterphenyls.



1625 1633

**Metal-ion induced amplification of three receptors from dynamic combinatorial libraries of peptide-hydrazones**

Sarah L. Roberts, Ricardo L. E. Furlan, Sijbren Otto and Jeremy K. M. Sanders

Dynamic combinatorial chemistry is used to identify three receptors which undergo substantial conformational rearrangement upon metal-ion guest binding.

1634

Yoshio Kosugi, Yoshio Imaoka, Fumisato Gotoh, Mohammad A. Rahim, Yoshihisa Matsui and Kinya Sakanishi

Carboxylations of alkali metal phenoxides with carbon dioxide

Yuji Kazuta, Satoshi Shuto, Hiroshi Abe and Akira Matsuda

The bisected *s-trans* conformation-controlled highly stereoselective addition of Grignard reagents to *C*-cyclopropylaldo-nitrone. An efficient synthesis of 1-phenyl-2-[(*S*)-1-aminoalkyl]-*N,N*-diethylcyclopropanecarboxamides, a new class of potent NMDA receptor antagonists

CONFERENCE DIARY



Dates, venues and contact details of forthcoming events.

COPIES OF CITED ARTICLES

The Library and Information Centre (LIC) of the RSC offers a first class Document Delivery Service for items in Chemistry and related subjects. Contact the LIC, The Royal Society of Chemistry, Burlington House, Piccadilly, London W1V 0BN, UK.

This service is only available from the LIC in London and not the RSC in Cambridge.

ADVANCED CONTENTS LISTS

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.

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 is available on <http://www.rsc.org/esi>: see article for further information.