Organic & Biomolecular Chemistry

An international journal of synthetic, physical and biomolecular organic chemistry

rsc.li/obc

The Royal Society of Chemistry is the world's leading chemistry community. Through our high impact journals and publications we connect the world with the chemical sciences and invest the profits back into the chemistry community.

IN THIS ISSUE

ISSN 1477-0520 CODEN OBCRAK 21(38) 7657-7842 (2023)







See Sarah J. Pike et al., pp. 7717-7723.

Image reproduced by permission of Sean Ozturk and Sarah Pike from Org. Biomol. Chem., 2023, 21. 7717.

REVIEWS

7666

Synthesis of 1,3-disubstituted bicyclo[1.1.1]pentanes by cross-coupling induced by transition metals - formation of C-C bonds

Tomohiro Yasukawa, Katja S. Håheim and Janine Cossy*

Cross-coupling reactions from 1970 to 2023

Nucleophilic BCPs

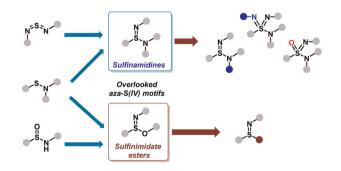
$$R \xrightarrow{M} R'X \qquad R \xrightarrow{R} R$$

Electrophilic BCPs

$$R \longrightarrow X \longrightarrow R$$

Overlooked aza-S(IV) motifs: synthesis and transformations of sulfinamidines and sulfinimidate esters

Michael Andresini, Marco Colella, Leonardo Degennaro and Renzo Luisi*



Editorial Staff

Executive Editor

Katie Lim

Deputy Editor

Jack Washington

Development Editor

Daniel Robertshaw

Editorial Production Manager

Sarah Whitehouse

Publishing Editors

Nicola Burton, Tom Cozens, Katie Fernandez, Ryan Kean, Roxane Owen

Editorial Assistant

Amy Cook

Publishing Assistant

Andrea Whiteside

Publisher

Sam Keltie

For queries about submitted papers, please contact Sarah Whitehouse, Editorial Production Manager in the first instance. E-mail: obc@rsc.org

For pre-submission queries please contact Katie Lim, Executive Editor. Email: obc-rsc@rsc.org

Organic & Biomolecular Chemistry (electronic: ISSN 1477-0539) is published 48 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 the Royal Society of Chemistry Order Department, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 OWF, UK

Tel +44 (0)1223 432398; E-mail orders@rsc.org

2023 Annual (electronic) subscription price: £5164; US\$9267. Customers in Canada will be subject to a surcharge to cover GST. Customers in the EU subscribing to the electronic version

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.

Whilst this material has been produced with all due care, the Royal Society of Chemistry cannot be held responsible or liable for its accuracy and completeness, nor for any consequences arising from any errors or the use of the information contained in this publication. The publication of advertisements does not constitute any endorsement by the Royal Society of Chemistry or Authors of any products advertised. The views and opinions advanced by contributors do not necessarily reflect those of the Royal Society of Chemistry which shall not be liable for any resulting loss or damage arising as a result of reliance upon this material. The Royal Society of Chemistry is a charity, registered in England and Wales, Number 207890, and a company incorporated in England by Royal Charter (Registered No. RC000524), registered office: Burlington House, Piccadilly, London W1J 0BA, UK, Telephone: +44 (0) 207 4378 6556.

Advertisement sales:

Tel +44 (0) 1223 432246; Fax +44 (0) 1223 426017; E-mail advertising@rsc.org

For marketing opportunities relating to this journal, contact marketing@rsc.org

Organic & Biomolecular Chemistry

Rapid publication of high quality organic chemistry research rsc.li/obc

Organic & Biomolecular Chemistry is a weekly journal for the publication of highly significant original research and reviews in all areas of organic chemistry, including organic synthesis, physical organic chemistry, and organic aspects of supramolecular chemistry and chemical

Editorial Board

Anthony Davis, University of Bristol. UK

Associate Editors

Christian Hackenberger, Leibniz-Institut für Molekulare Pharmakologie and Humboldt Universität zu Berlin, Germany

Katrina Jolliffe, University of Sydney, Australia Motomu Kanai, University of Tokyo, Japan

Lei Liu, Tsinghua University, China Xiaohua Liu, Sichuan University, China Santanu Mukherjee, Indian Institute of Science, Bangalore, India Scott Silverman, University of Illinois at

Urbana-Champaign, USA Cristina Truiillo, University of Manchester, UK

Members

Ivan Huc, Ludwig-Maximilian University of Munich, Germany S.S.V Ramasastry, Indian Institute of Science Education and Research Mohali, India Corinna Schindler, University of Michigan,

Judy I-Chia Wu, University of Houston, USA

Advisory Board

Igor Alabugin, Florida State University, USA Gonçalo Bernardes, University of Cambridge,

Shunsuke Chiba, Nanyang Technological University, Singapore Andre Cobb, Kings College London, UK

Steven Cobb, Durham University, UK Ratmir Derda, University of Alberta, Canada Antonio Echavarren, Institute of Chemical Research of Catalonia, Spain Ben Feringa, University of Groningen, The

Amar Flood, Indiana University Bloomington,

Carmen Galan, University of Bristol, UK

Jason Harper, University of New South Wales,

Elizabeth Krenske, University of Queensland, Australia

Mahesh Lakshman, The City College of New York, USA Shih-Yuan Liu, Boston College, USA Geraldine Masson, Institut de Chimie des

Substances Naturelles (CNRS), France Elizabeth New, University of Sydney, Australia Dhevalapally B. Ramachary, University of Hyderabad, India

Paolo Scrimin, University of Padova, Italy Oliver Seitz, Humboldt University of Berlin, Jay Siegel, University of Zürich, Switzerland Corey Stephenson, University of Michigan,

Dean Tantillo, University of California Davis,

Mark Taylor, University of Toronto, Canada Georgios Vassilikogiannakis, University of Crete, Greece

Helma Wennemers, ETH Zürich, Switzerland Peter Wipf, University of Pittsburgh, USA Shuli You, Shanghai Institute of Organic Chemistry, China

Jian Zhou, East China Normal University,

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: rsc.li/obc

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

This journal is @ The Royal Society of Chemistry 2023.

Apart from fair dealing for the purposes of research or private study for non-commercial purposes, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988 and the Copyright and Related Rights Regulation 2003, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the Publishers or in the case of reprographic reproduction in accordance with the terms of licences issued by the Copyright Licensing Agency in the UK. US copyright law is applicable to users in the USA.

Registered charity number: 207890

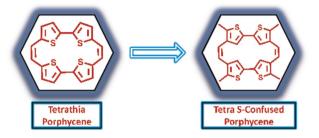


COMMUNICATIONS

7691

Tetra S-confused porphyrinoids

Vishnu Mishra, Hosahalli S. Udaya and Venkataramanarao G. Anand*



7696

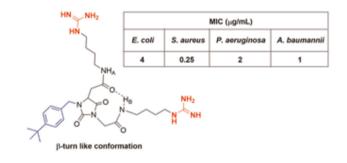
Copper(II)-catalyzed cascade Csp²-P/C-C bond formation to construct benzo[d]thiazol-2-ylphosphonates

Han Wang, Le Huang, Jun Li and Wenyan Hao*

7702

Synthesis of amphiphilic hydantoin-based universal peptidomimetics as antibiotic agents

Alessio M. Caramiello, Maria Cristina Bellucci, Emerenziana Ottaviano, Silvia Ancona, Elisa Borghi and Alessandro Volonterio*



7707

A facile synthesis of phthalimides from o-phthalaldehyde and amines \emph{via} tandem cyclocondensation and α -C-H oxidation by an electrochemical oxygen reduction reaction

Nalladhambi Neerathilingam, Sakthivel Prabhu and Ramasamy Anandhan*

COMMUNICATIONS

7712

Phosphine-catalyzed ring-opening reaction of cyclopropenones with dicarbonyl compounds

Chen Liang, Zhibin Chen, Xinyue Hu, Shengxia Yu, Zhenlian Wang* and Jiang Cheng*

PAPERS

7717 Conformational switching Cycle

Reversible conformational switching of a photo-responsive ortho-azobenzene/ 2,6-pyridyldicarboxamide heterofoldamer

Sarah J. Pike,* Richard Telford and Louise Male

7724



- Transition metal-free multi-component reaction O Photo-excitation successfully adaptable in sunlight Acridinium/Pyrylium salt as a photocatalyst Ocmpletely free from external-oxidant
- Photocatalytic C(sp³)–H bond functionalization
 - Accessible for gram-scale synthesis

An organo-photocatalyzed visible-light-driven multi-component approach for carbothioaryl/ alkylation of activated alkenes via C(sp3)-H bond functionalization

Debabrata Das, Krishna Gopal Ghosh, Sumit Garai, Chandu Palasetty and Sureshkumar Devarajulu*

7730

$$R \stackrel{\longleftarrow}{\longleftarrow} HN - Bn \stackrel{+}{\longrightarrow} H_3CO_2C \stackrel{\frown}{\longleftarrow} \frac{Aza-Michael}{or} \\ \frac{f(4+2)}{Cycloaddition?} H_3CO_2C \stackrel{\frown}{\longleftarrow} N - Bn \\ \frac{23a}{K_1(\sigma_1) = 3.6 \text{ nM}. Selectivity over } \sigma_2.$$
 GluN2B and opioid receptors $\log \rho_{7,4} = 2.43$, LLE = 6.0

Diastereoselective synthesis and structure-affinity relationships of σ_1 receptor ligands with spirocyclic

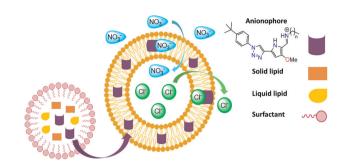
Tobias Winge, Dirk Schepmann, Judith Schmidt, Constantin Daniliuc, Ernst-Ulrich Würthwein and Bernhard Wünsch*

PAPERS

7753

Formulation and evaluation of anion transporters in nanostructured lipid carriers

Daniel Alonso-Carrillo, Israel Carreira-Barral, Marcin Mielczarek, Andrea Sancho-Medina, Enara Herran, Claudia Vairo, Angel Del Pozo, Iris Luzuriaga, Nerea Lazcanoiturburu, Oihane Ibarrola, Sara Ponce, María Villar-Vidal, María García-Valverde and Roberto Quesada*



7758

The diacetyliminoxyl radical in oxidative functionalization of alkenes

Alexander S. Budnikov, Igor B. Krylov,* Andrey V. Lastovko, Roman A. Dolotov, Mikhail I. Shevchenko and Alexander O. Terent'ev*

7767

Understanding the reactivity and selectivity of Diels-Alder reactions involving furans

Tiago Vinicius Alves* and Israel Fernández*

7776

Trace water in a BF₃·OEt₂ system: a facile access to sulfinyl alkenylsulfones from alkynes and sodium sulfinates

Shi-Wei Yu, Zu-Jia Chen, Zhao-Hua Chen, Si-Hong Chen, Kai Yang,* Wen-Jin Xu and Zhao-Yang Wang*

PAPERS

7782 acetyl 25% polyethylene glycol Accesibility of surface charges

Cell internalization kinetics and surface charge accessibility of surface-modified PAMAM dendrimers

Carola F. Díaz.* Diego L. Cifuentes. Maximiliano Oyarzún, Verónica A. Jiménez* and Leonardo Guzmán

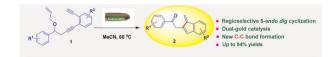
7791



Direct synthesis of haloaromatics from nitroarenes via a sequential one-pot Mo-catalyzed reduction/ Sandmeyer reaction

Raquel Hernández-Ruiz, Sara Gómez-Gil, María R. Pedrosa, Samuel Suárez-Pantiga and Roberto Sanz*

7799



Dual gold-catalyzed regioselective synthesis of benzofulvenes via 5-endo dig cyclization

Gottam Sreenivasulu, Balasubramanian Sridhar and Galla V. Karunakar*

Relay Inflammation (TICT) SWJT-OH

Sequential detection of inflammation-related hypochlorite ions and viscosity with a relay fluorescent probe

Yu-Qing Zhang, Zhi-Nan Kang, Jing-Jie Ming, Sheng-Nan Suo, Jia-Ling Kang, Hai Xu,* Ya-Wen Wang* and Yu Peng

PAPERS

7813

The development of a broad-spectrum retaining β-exo-galactosidase activity-based probe

Chi-Lin Kuo, Qin Su, Adrianus M. C. H. van den Nieuwendijk, Thomas J. M. Beenakker, Wendy A. Offen, Lianne I. Willems, Rolf. G. Boot, Alexi J. Sarris, André R. A. Marques, Jeroen D. C. Codée, Gijsbert A. van der Marel, Bogdan I. Florea, Gideon J. Davies, Herman S. Overkleeft* and Johannes M. F. G. Aerts*

$$\begin{array}{c} \text{In gel visualisation} \\ \text{HO} \\ \text{OH} \\ \text{HO} \\ \text{HO} \\ \text{OH} \\ \text{HO} \\ \text{HO}$$

7821

A new synthetic approach to cyclic ureas through carbonylation using di-tert-butyl dicarbonate (boc anhydride) via one pot strategy

Rapeti Thrinadh Kumar, Parameshwar Makam, Naresh Kumar Katari* and Ravi K. Kottalanka*

7831

Julolidine-based small molecular probes for fluorescence imaging of RNA in live cells

Iswar Chandra Mondal, Priya Rawat, Maksym Galkin, Snata Deka, Anirban Karmakar, Prosenjit Mondal* and Subrata Ghosh*

