

Organic & Biomolecular Chemistry

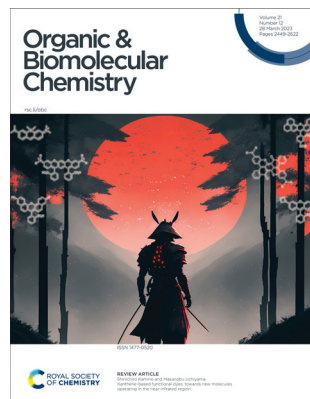
An international journal of synthetic, physical and biomolecular organic chemistry

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

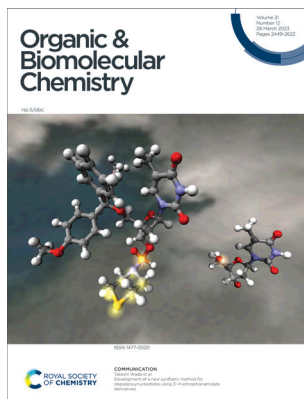
ISSN 1477-0520 CODEN OBCRAK 21(12) 2449–2622 (2023)



Cover

See Shinichiro Kamino and Masanobu Uchiyama, pp. 2458–2471.

Image reproduced by permission of Shinichiro Kamino from *Org. Biomol. Chem.*, 2023, **21**, 2458.



Inside cover

See Takeshi Wada et al., pp. 2486–2492.

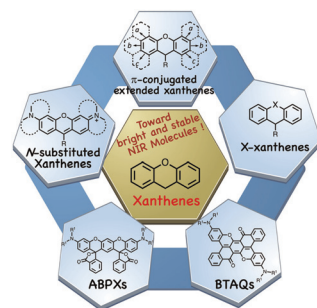
Cover image designed and reproduced by permission of Takeshi Wada from *Org. Biomol. Chem.*, 2023, **21**, 2486.

REVIEWS

2458

Xanthene-based functional dyes: towards new molecules operating in the near-infrared region

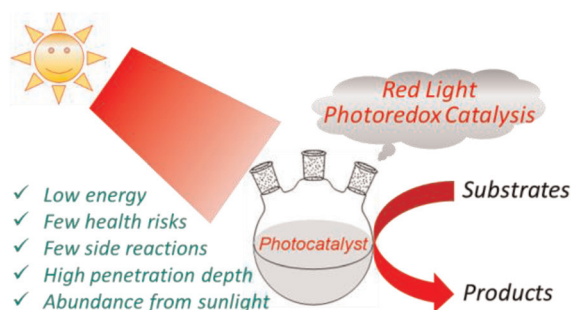
Shinichiro Kamino* and Masanobu Uchiyama*



2472

Applications of red light photoredox catalysis in organic synthesis

Alexander H. Schade and Liangyong Mei*



Editorial Staff

Executive Editor

Rebecca Garton

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, Alex Rowles

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 Rebecca Garton, 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 0WF, 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 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.

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 biology.

Editorial Board

Chair

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

Elizabeth Krenske, University of Queensland, Australia

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

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, USA
Judy I-Chia Wu, University of Houston, USA

Advisory Board

Kyo Han Ahn, Pohang University of Science and Technology, Korea
Gonçalo Bernardes, University of Cambridge, UK
Shunsuke Chiba, Nanyang Technological University, Singapore
Andre Cobb, Kings College London, UK
Steven Cobb, Durham University, UK
Ratmir Derda, University of Alberta, Canada
Antonio Echavarrén, Institute of Chemical Research of Catalonia, Spain
Ben Feringa, University of Groningen, The Netherlands

Amar Flood, Indiana University Bloomington, USA
Carmen Galan, University of Bristol, UK
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
Dhevalapally B. Ramachary, University of Hyderabad, India
Paolo Scrimin, University of Padova, Italy
Oliver Seitz, Humboldt University of Berlin, Germany
Jay Siegel, University of Zürich, Switzerland

Corey Stephenson, University of Michigan, USA
Dean Tantillo, University of California Davis, USA
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, China

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

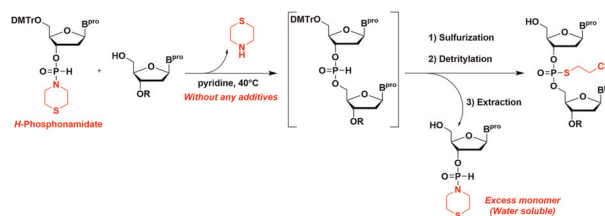


COMMUNICATIONS

2486

Development of a new synthetic method for oligodeoxynucleotides using 3'-H-phosphoramidate derivatives

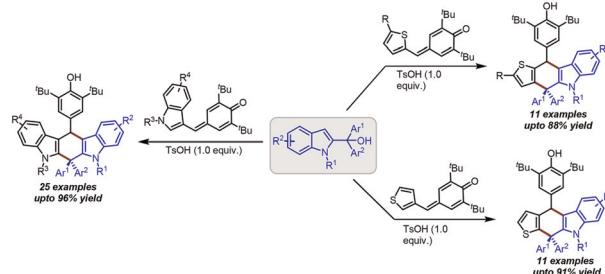
Taiki Tsurusaki, Kazuki Sato and Takeshi Wada*



2493

Construction of heterocycle-fused tetrahydrocarbazoles through a formal [3 + 3]-annulation of 2-indolymethanols with *para*-quinone methides

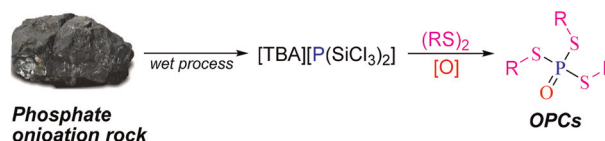
Gurdeep Singh, Sonam Sharma, Rajat Pandey, Rekha and Ramasamy Vijaya Anand*



2499

Direct synthesis of phosphorotrithioates from [TBA][P(SiCl₃)₂] and disulfides

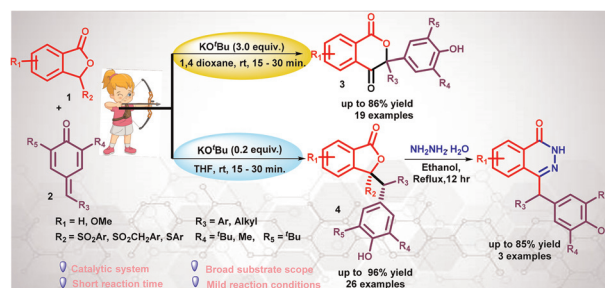
Hui Luo, Ming Li,* Xi-Cun Wang and Zheng-Jun Quan*



2504

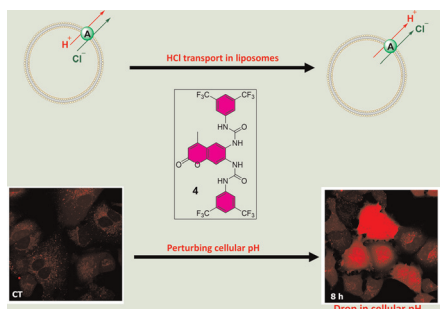
Addition of sulfonylphthalides to *para*-quinone methides: Selective 1,6-additions and oxidative annulations

Kavyashree Kuppayya Gond and Mahagundappa Rachappa Maddani*



PAPERS

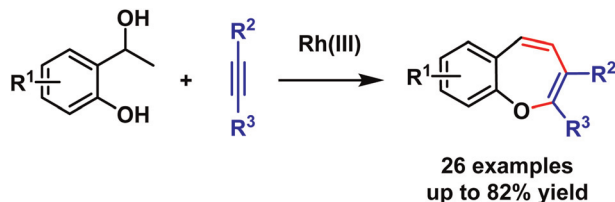
2509



A potent fluorescent transmembrane HCl transporter perturbs cellular pH and promotes cancer cell death

Mohamed Fares, Xin Wu, Daniel A. McNaughton, Alexander M. Gilchrist, William Lewis, Paul A. Keller, Alain Arias-Betancur, Pere Fontova, Ricardo Pérez-Tomás and Philip A. Gale*

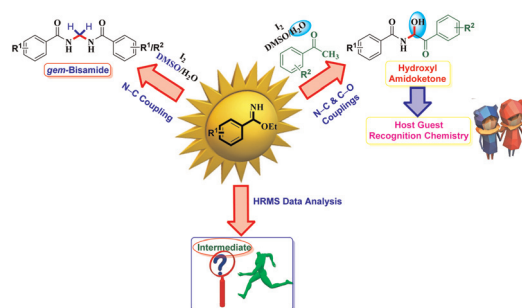
2516



Rh(III)-catalyzed (5 + 2)-cycloaddition reactions of *ortho*-hydroxyethyl phenols with internal alkynes: efficient synthesis of benzoxepines

Pratiksha Bhorali, Jyotshna Phukon and Sanjib Gogoi*

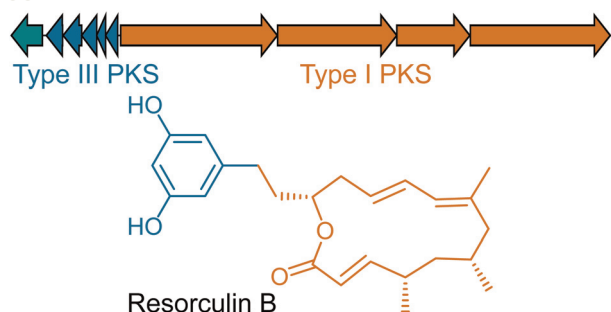
2524



Catalytic I_2 -moist DMSO-mediated synthesis of valuable α -amidohydroxyketones and unsymmetrical *gem*-bisamides from benzimidates

Shobhon Aich, Rajesh Nandi, Nirbhik Chatterjee, Krishnanka S. Gayen, Subhasis Pal and Dilip K. Maiti*

2531



Resorculins: hybrid polyketide macrolides from *Streptomyces* sp. MST-91080

Heather J. Lacey, Rachel Chen, Daniel Vuong, Ernest Lacey, Peter J. Rutledge, Yit-Heng Chooi, Andrew M. Piggott and Thomas J. Booth*

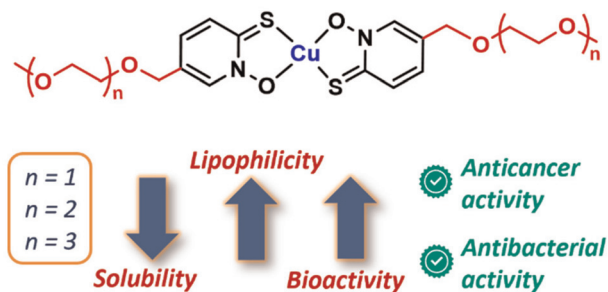


PAPERS

2539

Water-soluble copper pyrithione complexes with cytotoxic and antibacterial activity

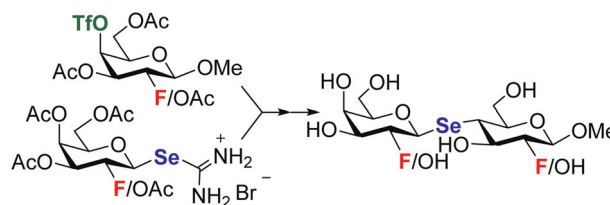
Atreyee Mishra, Karrera Y. Djoko, Yi-Hsuan Lee, Rianne M. Lord, Grace Kaul, Abdul Akhir, Deepanshi Saxena, Sidharth Chopra and James W. Walton*



2545

Synthesis of fluoro- and seleno-containing D-lactose and D-galactose analogues

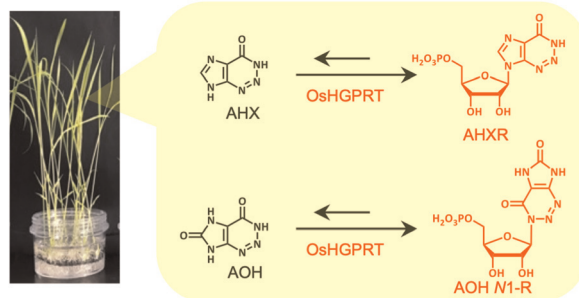
Cecilia Romanò, Dennis Bengtsson, Angela Simona Infantino and Stefan Oscarson*



2556

Role of hypoxanthine-guanine phosphoribosyltransferase in the metabolism of fairy chemicals in rice

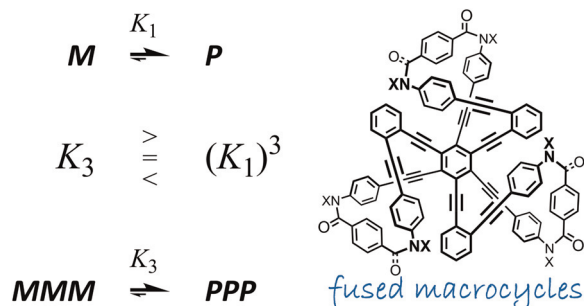
Hirohide Takemura, Jae-Hoon Choi, Keiji Fushimi, Rei Narikawa, Jing Wu, Mitsuru Kondo, David C. Nelson, Tomohiro Suzuki, Hitoshi Ouchi, Makoto Inai, Hirofumi Hirai and Hirokazu Kawagishi*



2562

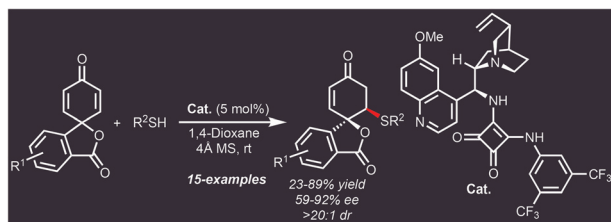
An attempt to consider cooperativity in helical-sense preferences induced in fused macrocycles

Ryo Katoono,* Takaaki Kudo and Shunsuke Kawai



PAPERS

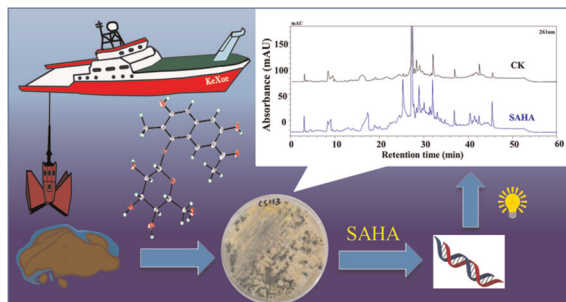
2570



Asymmetric synthesis of spirocyclic isobenzofuranones via a squaramide-catalysed sulfa-Michael desymmetrisation reaction

Tamanna, Deepak Sharma and Pankaj Chauhan*

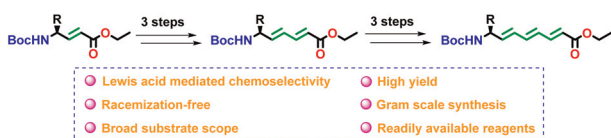
2575



Antimicrobial polyketides and sesquiterpene lactones from the deep-sea cold-seep-derived fungus *Talaromyces minioluteus* CS-113 triggered by the histone deacetylase inhibitor SAHA

Sui-Qun Yang,* Qi Song, Xiao-Ming Li, Xin Li, Hong-Lei Li, Ling-Hong Meng and Bin-Gui Wang*

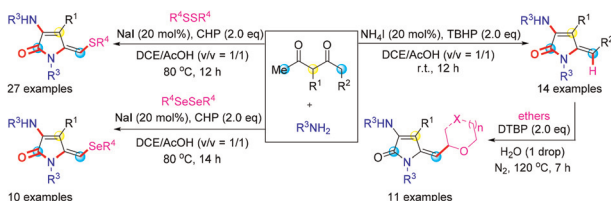
2586



Stereoselective synthesis of backbone extended π -conjugated amino esters

Sachin A. Nalawade, Manjeet Singh, DRGKoppalu R. Puneeth Kumar, Sanjit Dey and Hosahudya N. Gopi*

2596



Access to thiionized-, selenolized-, and alkylated 5-alkylidene 3-pyrrolin-2-one derivatives via a regioselective oxidative annulation reaction

Donghan Liu, Siyu Song, Longkun Chen, Mingshuai Zhang, Zhuoyuan Liu, Xihang Lu, Jiuzhong Huang* and Fuchao Yu*

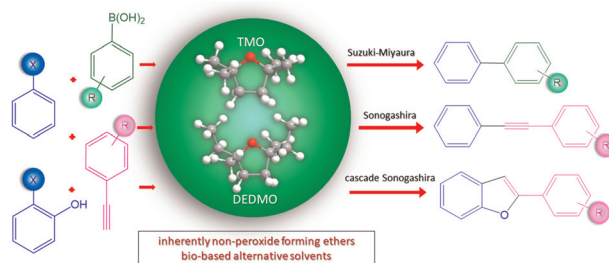


PAPERS

2603

Application of hindered ether solvents for palladium catalyzed Suzuki–Miyaura, Sonogashira and cascade Sonogashira cross-coupling reactions

Suwiwat Sangon, Nontipa Supanchaiyamat, James Sherwood, Duncan J. Macquarrie, Pakin Noppawan and Andrew J. Hunt*



2610

Computational insight into gold(i)-catalyzed intramolecular regioselectivity of tryptamine-ynamide cycloisomerizations

Shitao Sun, Jinle Hao, Maosheng Cheng, Yongxiang Liu and Bin Lin*

