

Organic & Biomolecular Chemistry

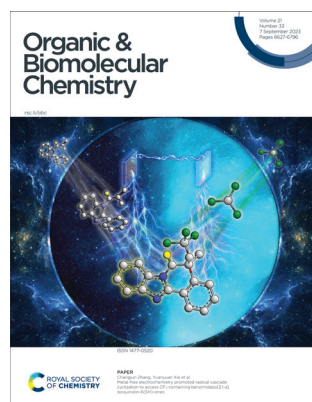
An international journal of synthetic, physical and biomolecular organic chemistry

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(33) 6627-6796 (2023)



Cover

See Changjun Zhang,
Yuanyuan Xie *et al.*,
pp. 6715–6718.

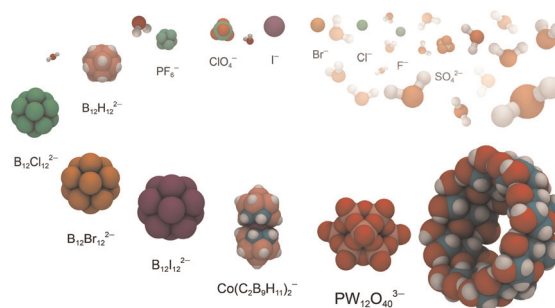
Image reproduced by
permission of Yuanyuan Xie
from *Org. Biomol. Chem.*,
2023, **21**, 6715.

REVIEWS

6636

Large anion binding in water

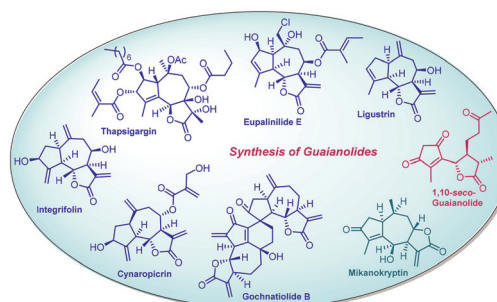
Khaleel I. Assaf* and Werner M. Nau*



6652

Recent advances in the syntheses of guaianolides

Rodney A. Fernandes,* Sanjita Moharana and
Gulenur Nesha Khatun



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

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 Trujillo, 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,

USA

Judy I-Chia Wu, University of Houston, USA

Advisory Board

Kyo Han Ahn, Pohang University of Science and Technology, Korea

Igor Alabugin, Florida State University, USA

Gonçalo Bernardes, University of Cambridge, UK

Shunsuke Chiba, Nanyang Technological

University, Singapore

Andre Cobb, Kings College London, UK

Steven Cobb, Durham University, UK

Ratmir Derd, University of Alberta, Canada

Antonio Echavaren, 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

Jason Harper, University of New South Wales,

Australia

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,

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

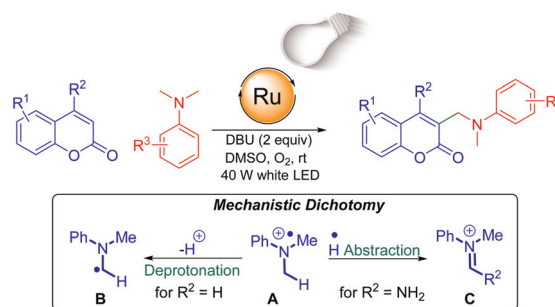


COMMUNICATIONS

6671

Visible-light mediated, oxygen-promoted regioselective cross-dehydrogenative coupling of coumarins and dimethylanilines

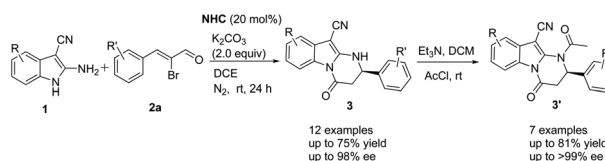
Tavinder Singh, Ganesh Chandra Upreti, Shivani Arora, Himanshu Chauhan and Anand Singh*



6675

N-Heterocyclic carbene-catalyzed enantioselective annulation of 2-amino-1H-indoles and bromoenals for the synthesis of chiral 2-aryl-2,3-dihydropyrimido [1,2-a]indol-4 (1H)-ones

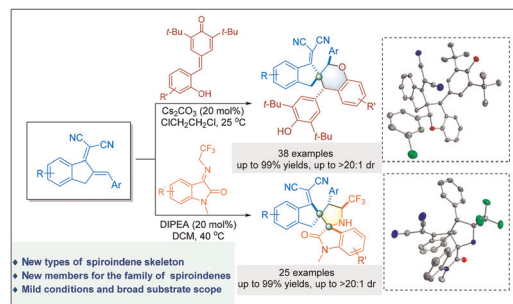
Jianbo Zhao, Min Wu, Jiamin Luo, Lei Shi and Hao Li*



6681

Regio- and diastereoselective synthesis of diverse spirocyclic indenenes by cyclization with indene-dienes as two carbon building blocks

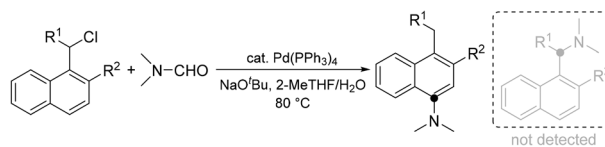
Yi-Hang Deng, Wen-Li Xu, Lei Wang, Cheng-Yang Tang, Ji-Ya Fu* and Chuan-Bao Zhang*



6687

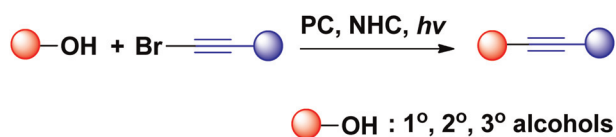
Palladium-catalyzed C–H dimethylamination of 1-chloromethyl naphthalenes with N,N-dimethylformamide as the dimethyl amino source

Sheng Zhang,* Ziyang Wang, Ya Gao, Masahiko Yamaguchi and Ming Bao*



COMMUNICATIONS

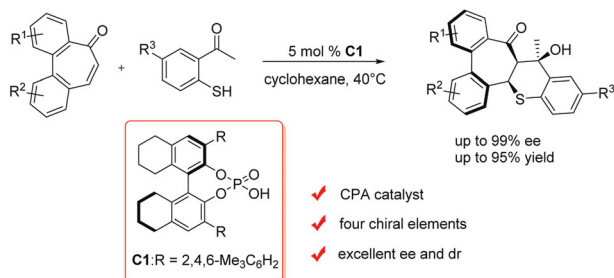
6693



NHC-mediated photocatalytic deoxygenation of alcohols for the synthesis of internal alkynes via a Csp^3 – Csp coupling reaction

Xueji Ma,* Lijie Wang, Xiaoqing Meng, Wenbo Li, Qin Wang, Yuke Gu and Lingna Qiu

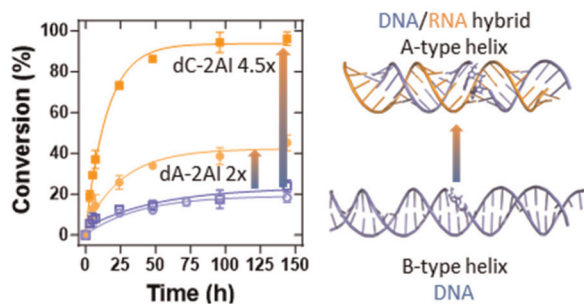
6697



CPA-catalyzed asymmetric domino thia-Michael/aldol reactions for simultaneous chiral center and axial chirality formation

Xilong Wang, Yu Luo, Jiaji Zhao* and Shuang Luo*

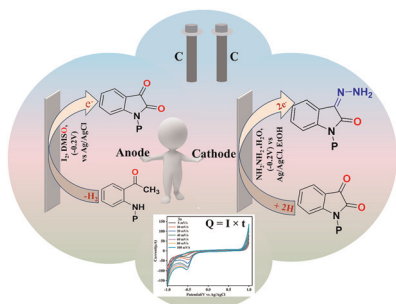
6702



Role of helicity in the nonenzymatic template-directed primer extension of DNA

Sung Joon Park, Kimberley Laura Callaghan and Amanda Vera Ellis*

6707



Electro-organic synthesis of isatins and hydrazones through C–N cross-coupling and C(sp²)–H/C(sp³)–H functionalization

Neetu Verma, Rajdeep Tyagi, Ashish Khanna, Manisha Malviya* and Ram Sagar*

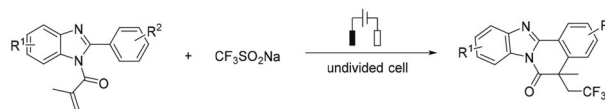


PAPERS

6715

Metal-free electrochemistry promoted radical cascade cyclization to access CF₃-containing benzimidazo[2,1-a]isoquinolin-6(5H)-ones

Changjun Zhang,* Zhichen Yu, Yuxin Ding, Yuan Shi and Yuanyuan Xie*

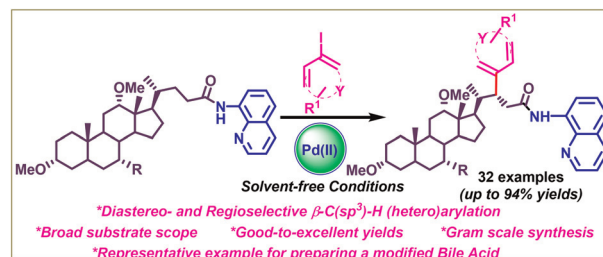


- Simple and mild conditions
- Cascade process
- Broad substrate scope
- High atom economy

6719

Synthesis of modified bile acids *via* palladium-catalyzed C(sp³)-H (hetero)arylation

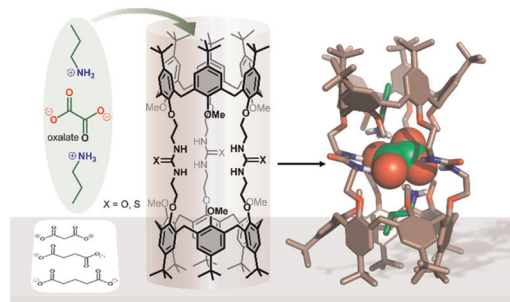
Somnath Arjun Borade, Sushma Naharwal, Himanshi Bhambri, Sanjay K. Mandal, Kiran Bajaj, Deepak Chitkara and Rajeev Sakhuja*



6730

Selective binding of oxalate by a tris-ureido calix[6] tube in a protic environment

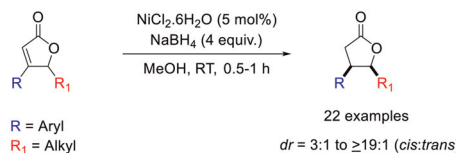
Roy Lavendomme, Steven Moerkerke, Gaëlle Mariaule and Ivan Jabin*



6738

Expeditious access to *cis*- β -aryl, γ -alkyl disubstituted (\pm)- γ -butyrolactones *via* nickel-hydride catalysis

O. Stephen Ojo,* Hannah J. Steel and Haralampos N. Miras

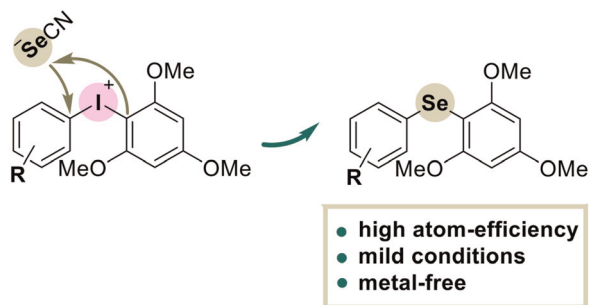


- ✓ Economical and practical
- ✓ Easy and quick access to disubstituted γ -butyrolactones
- ✓ *cis*-product selective
- ✓ *in-situ* generated Nickel-hydride



PAPERS

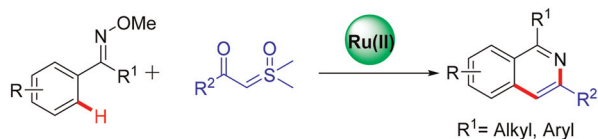
6743



Metal-free and atom-efficient protocol for diarylation of selenocyanate by diaryliodonium salts

Amirbek D. Radzhabov, Natalia S. Soldatova,*
 Daniil M. Ivanov, Mekhman S. Yusubov,
 Vadim Yu. Kukushkin and Pavel S. Postnikov*

6750

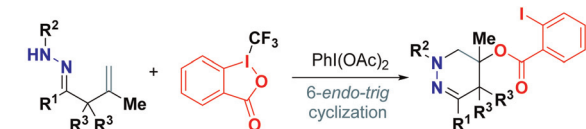


- ✓ Inexpensive Ru catalyst
- ✓ No external oxidant
- ✓ Good functional group tolerance
- ✓ Broad range of substrates

Ru-catalyzed C–H activation/cyclization of oximes with sulfoxonium ylides to access isoquinolines

Darun Yang, Hongyan Xu, Xuejun Zhang, Yuntao Hu,
 Decai Huang and Huaqing Zhao*

6757

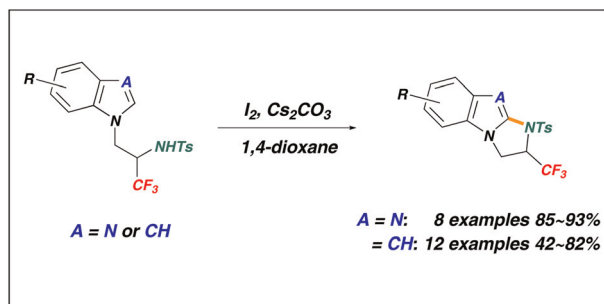


- Mild reaction conditions
- Wide substrate scope
- Form C–N and C–O bands
- 26 examples, up to 75% yield

PhI(OAc)₂-mediated aminoacyloxylation of β,γ -unsaturated hydrazones using Togni reagent II as an acyloxyl precursor

Dong-Fang Jiang,* Zhenjie Qi, Dengfeng Li,
 Si-Miaomiao Wen, Zhao Liu, Wen-Juan Hao and
 Bo Jiang*

6762



Iodine-promoted synthesis of CF₃-substituted dihydroimidazobenzimidazole and CF₃-dihydroimidazoindole via C–N bond formation

Daiki Komatsu, Kasumi Yamada and Takeshi Hanamoto*



PAPERS

6772

Visible light-induced radical cascade acylmethylation/cyclization of 2-(allyloxy) arylaldehydes with α -bromo ketones: access to cyclic 1,5-dicarbonyl-containing chroman-4-one skeletons

Xiao-Hong Huang, Feng-Lin Liu, Ting-Feng Fu, Xiao Hu, Ya-Yu Wang, Bo Liu, Ming-Yu Teng and Guo-Li Huang*

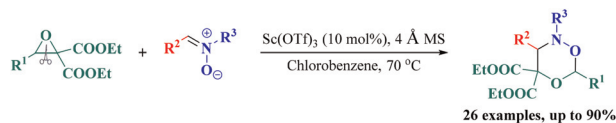


- ✓ Visible light organophotocatalysis
- ✓ High functional-group tolerance
- ✓ Broad substrate scope
- ✓ Metal- and oxidant-free
- ✓ Large-scale synthesis
- ✓ Mild reaction conditions

6778

Cycloaddition of *N*-arylnitrones with donor-acceptor oxiranes via C–C bond cleavage to construct 1,5,2-dioxazinanes

Wenhui Li, Jianying Lin, Shuangping Huang, Qiang Liu, Wenlong Wei and Xing Li*

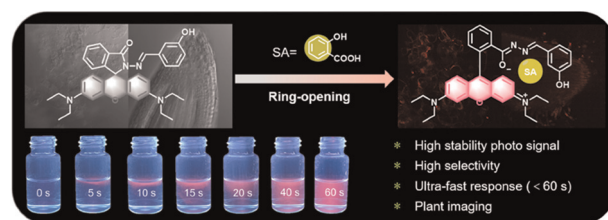


- ♣ Selective cleavage of C–C bond
- ♣ Mild reaction conditions
- ♣ Wide substrate scope
- ♣ High atom economy

6783

Rhodamine-based fluorescent sensors for the rapid and selective off–on detection of salicylic acid and their use in plant cell imaging

Jie-Ying Chen, Ping Yang, Hou-Yun Huang, A-Ling Tang, Mei-Hong Ge, Wei Niu, Shi-Tao Liu, Shuai Tan, Wen-Jing Ma, Xiang Zhou,* Li-Wei Liu and Song Yang*



6789

A *cis*- β -iron(III) SALPN catalyst for hydrogen atom transfer reductions and olefin cross couplings

Michael Ricca, Shaolei Yao, Tommy Le, Jonathan M. White, Paul S. Donnelly and Mark A. Rizzacasa*

