Natural Product Reports

High impact, critical reviews in natural product research and related areas

rsc.li/npr

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 0265-0568 CODEN NPRRDF 40(3) 503-752 (2023)



Cover

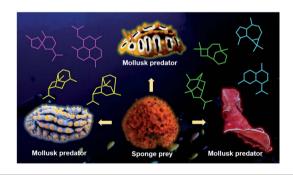
See Yue-Wei Guo, Xu-Wen Li et al., pp. 509-556. Image reproduced by permission of Xu-Wen Li from Nat. Prod. Rep., 2023, 40, 509. Photographs of P. ocellata by Stephen Childs, P. coelestis by Patrick Randall, A. depilans by Sylvain Le Bris, and J. funebris by Silke Baron. All via www.medslugs.de, reproduced via https:// creativecommons.org/ licenses/by-sa/3.0/.

REVIEWS

509

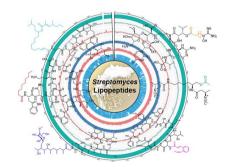
Recent advances on marine mollusk-derived natural products: chemistry, chemical ecology and therapeutical potential

Zi-Hui Chen, Yue-Wei Guo* and Xu-Wen Li*



Structural diversity, biosynthesis, and biological functions of lipopeptides from Streptomyces

Songya Zhang, Yunliang Chen, Jing Zhu, Qiujie Lu, Max J. Cryle,* Youming Zhang* and Fu Yan*



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 articles please contact Sarah Whitehouse, Editorial Production Manager, in the first instance. E-mail npr@rsc.org

For pre-submission queries please contact Rebecca Garton, Executive Editor, E-mail npr-rsc@rsc.org

Natural Product Reports (electronic: ISSN 1460-4752) is published 12 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: £1257 US\$2212. 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 Royal Society of Chemistry 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

Natural Product Reports

rsc.li/npr

Natural Product Reports is a critical review journal that stimulates progress in all areas of natural products research, including isolation, structural and stereochemical determination, biosynthesis, biological activity and synthesis. The scope of the journal is very broad, and many reviews discuss the role of natural products in the wider bioinorganic, bioorganic and chemical biology communities.

Editorial Board

Tobias Gulder, Technical University of Dresden, Germany

Members

Heike Brötz-Oesterhelt, University of Tübingen, Germany Nadia Cech, University of North Carolina, Greensboro, USA Hendrik Luesch, University of Florida, USA Marnix Medema, Wageningen University, Netherlands

Dong-Chan Oh, Seoul National University, South Korea

Cassandra Quave, Emory Univeristy, USA

Margherita Sosio, Naicons Srl, Milan, Italy Eriko Takano, University of Manchester, UK Christopher Vanderwal, University of California, Irvine, USA

Changsheng Zhang, South China Sea Institute of Oceanology, China Academy of Sciences.

Advisory Board

Giovanni Appendino, Universita del Piemonte Orientale, Italy

Carole Bewley, National Institutes of Health,

Christopher Boddy, University of Ottawa, Canada Robert Britton, Simon Fraser University,

Margaret Brimble, University of Auckland,

New Zealand Mark Brönstrup, Helmholtz Centre for

Infection Research, Germany Guy Carter, Carter-Bernan Consulting, USA Russell Cox, Leibniz Universität Hannover, Germany

Pieter Dorrestein, University of California San Olga Genilloud, Fundación MEDINA, Spain

Rebecca Goss, St Andrews University, UK Seth Herzon, Yale University, USA Chambers Hughes, University of Tübingen, Marcel Jaspars, University of Aberdeen, UK Martin Kaltenpoth, Max Planck Institute for Chemical Ecology, Germany Andreas Kirschning, University of Hannover, Germany

Julia Kubanek, Georgia Institute of Technology, USA

Wen Liu, Shanghai Institute of Organic Chemistry, China

Sandra Loesgen, University of Florida, USA Dawei Ma, Shanghai Institute of Organic Chemistry, China Sarah O'Connor, Max Planck Institute for

Chemical Ecology, Jena, Germany Jörn Piel, ETH Zürich, Switzerland Jürgen Rohr, University of Kentucky, USA Martin Schmeing, McGill University, Canada Stefan Schulz, TU Braunschweig, Germany Michael Sherburn, Australia National University, Australia

Thomas I Simpson, University of Bristol, UK Janet Smith, University of Michigan, USA

Renxiang Tan, Nanjing University, China Dirk Trauner, University of Pennsylvania, USA Kira Weissman, Lorraine University, France Craig Williams, The University of Queensland, Australia

Zhen Yang, Peking University, China Yeo Joon Yoon, Seoul National University,

Information for Authors

Articles in Natural Product Reports are generally commissioned by the editorial staff and editorial board, however, offers of articles for publication may be considered by submitting a short synopsis to Dr Rebecca Garton, Editor. E-mail: npr-rsc@rsc.org Full details are available from the website at www.rsc.org/npr

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

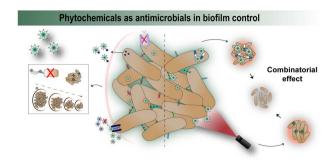


REVIEWS

595

The action of phytochemicals in biofilm control

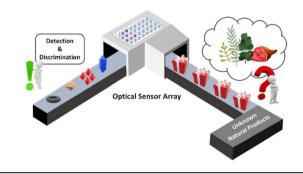
Ariana S. C. Gonçalves, Miguel M. Leitão, Manuel Simões* and Anabela Borges*



628

Optical sensor arrays for the detection and discrimination of natural products

Maohua Yang, Mei Zhang and Mingyan Jia*



646

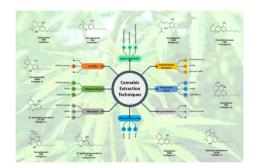
Natural nematicidal metabolites and advances in their biocontrol capacity on plant parasitic nematodes

Guo-Hong Li and Ke-Qin Zhang*

676

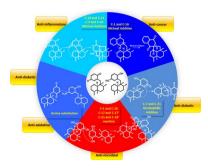
Extraction techniques for bioactive compounds of cannabis

Aitor Sainz Martinez, Olga Lanaridi, Kristof Stagel, Heidi Halbwirth, Michael Schnürch and Katharina Bica-Schröder*



REVIEWS

718



Natural sesquiterpene quinone/quinols: chemistry, biological activity, and synthesis

Xin-Hui Tian, Li-Li Hong, Wei-Hua Jiao and Hou-Wen Lin*