

# RSC Chemical Biology

rsc.li/rsc-chembio

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 2633-0679 CODEN RCBSAO 4(12) 967-1132 (2023)



### Cover

See Hans-Achim Wagenknecht *et al.*, pp. 1037–1042.  
Image reproduced by permission of Mathis Robin Mitha from *RSC Chem. Biol.*, 2023, 4, 1037.



### Inside cover

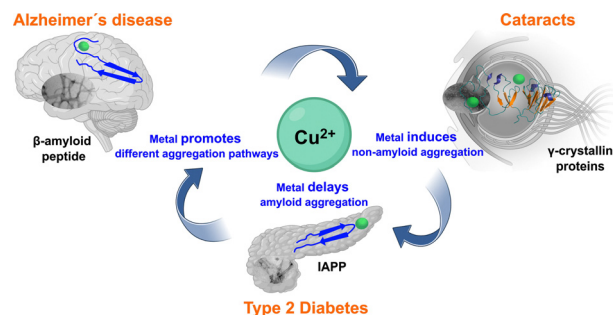
See Yvonne Mast *et al.*, pp. 1050–1063.  
Image reproduced by permission of Yvonne Mast from *RSC Chem. Biol.*, 2023, 4, 1050.  
Photograph of *Streptomyces* colony by Felix Gonther.

## OPINION

974

### Copper binding and protein aggregation: a journey from the brain to the human lens

Yanahi Posadas, Carolina Sánchez-López and Liliana Quintanar\*

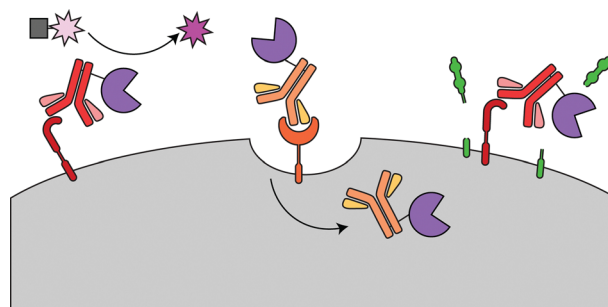


## REVIEWS

986

### Bringing enzymes to the proximity party

Gabrielle S. Tender and Carolyn R. Bertozzi\*



**Executive Editor**

Anna Rulka

**Deputy Editor**

Audra Taylor

**Editorial Production Manager**

Viktoria Titmus

**Assistant Editors**

Shwetha Krishna, Angelica-Jane Onyekwere, Michael Whitelaw, Alexander Whiteside

**Editorial Assistant**

Samantha Campos

**Publishing Assistant**

Brittany Hanlon

**Publisher**

Neil Hammond

For queries about submitted papers, please contact Viktoria Titmus, Editorial Production Manager in the first instance. E-mail: chembio@rsc.org

For pre-submission queries please contact Anna Rulka, Executive Editor. Email: chembio-rsc@rsc.org

RSC Chemical Biology (electronic: ISSN 2633-0679) is published 12 times a year by the Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, UK CB4 0WF

RSC Chemical Biology is a Gold Open Access journal and all articles are free to read. Please email orders@rsc.org to register your interest or contact 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

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

# RSC Chemical Biology

rsc.li/rsc-chembio

RSC Chemical Biology publishes exceptionally significant findings in chemical biology

## Editorial Board

**Chair**

Hiroaki Suga, The University of Tokyo, Japan

**Associate Editors**

Claudia Höbartner, University of Würzburg, Germany  
Zaneta Nikolovska-Coleska, University of Michigan, USA

Andrea Rentmeister, University of Münster, Germany  
Roderich Süßmuth, Technical University of Berlin, Germany  
Cai-Guang Yang, Shanghai Institute of Materia Medica, China

**Members**

Michelle Arkin, University of California San Francisco, USA  
Jennifer Heemstra, Washington University, St Louis, USA  
Ali Tavassoli, University of Southampton, UK

## Advisory Board

Christopher Chang, University of California, Berkeley, USA

Dorothea Fiedler, FMP Berlin, Germany  
Christian Hackenberger, FMP Berlin, Germany

Maja Köhn, University of Freiburg, Germany  
Yamuna Krishnan, University of Chicago, USA

Jennifer Prescher, University of California, Irvine, USA

Christopher Schofield, University of Oxford, UK

Pamela Silver, Harvard Medical School, USA

Kira Weissman, University of Lorraine, France

Christopher Schofield, University of Oxford, UK

Peng Chen, Peking University, China  
Hermen Overkleeft, Leiden University, Netherlands

Xiu-Jie Wang, Bayes Business School London, UK

Don Hilvert, ETH Zürich, Switzerland

Jin Zhang, University of California San Diego, USA

Laura Kiessling, MIT, USA

Giulio Superti-Furga, Medical University of Vienna, Austria

Luc Brunsveld, Eindhoven University of Technology, Netherlands

May Khanna, University of Arizona, USA

Paul Joseph Dyson, Swiss Federal Institute of Technology Lausanne, Switzerland

Lei Liu, Tsinghua University, China

Guifang Jia, Peking University, China

Chudi Ndubaku, ORIC Pharmaceuticals, USA

## Information for Authors

Full details on how to submit material for publication in RSC Chemical Biology 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/rsc-chembio](http://rsc.li/rsc-chembio)

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

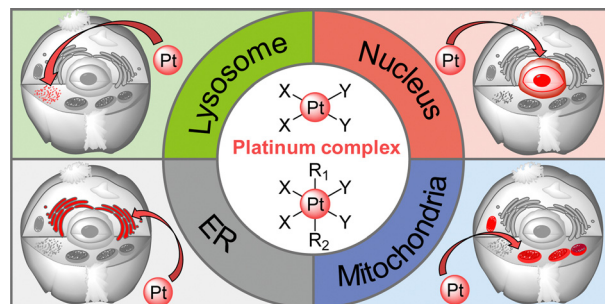


## REVIEWS

1003

### Unlocking the potential of platinum drugs: organelle-targeted small-molecule platinum complexes for improved anticancer performance

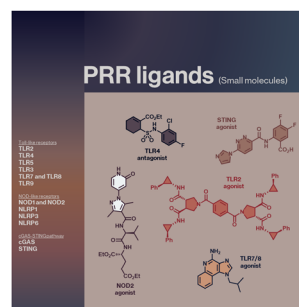
Zhiqin Deng, Shu Chen, Gongyuan Liu and Guangyu Zhu\*



1014

### Small molecule modulators of immune pattern recognition receptors

Taku Tsukidate, Charles W. Hespden and Howard C. Hang\*

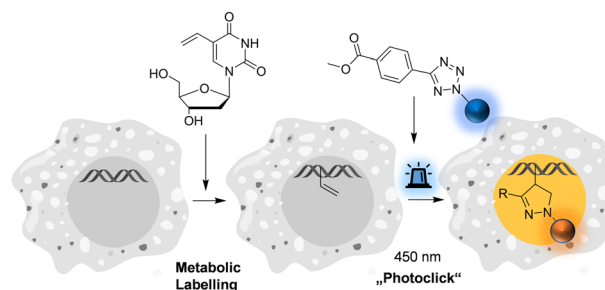


## COMMUNICATIONS

1037

### Metabolic labelling of DNA in cells by means of the "photoclick" reaction triggered by visible light

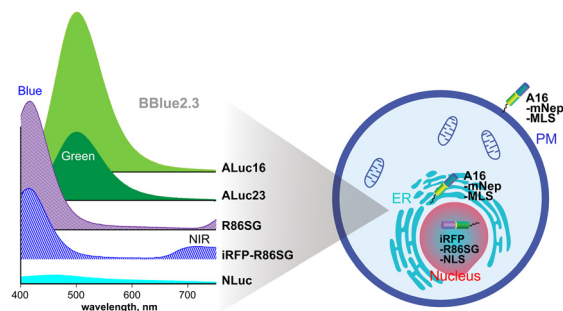
Lisa Rieger, Bastian Pfeuffer and Hans-Achim Wagenknecht\*



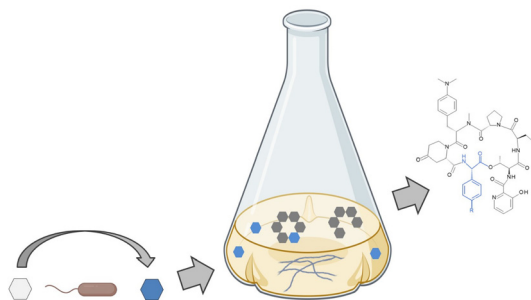
1043

### Single-chain multicolor-reporter templates for subcellular localization of molecular events in mammalian cells

Sung-Bae Kim,\* Ramasamy Paulmurugan, Nobuo Kitada and Sojiro A. Maki



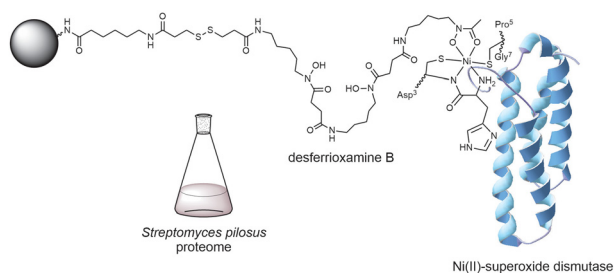
1050



### Biotransformation-coupled mutasynthesis for the generation of novel pristinomycin derivatives by engineering the phenylglycine residue

Oliver Hennrich, Leoni Weinmann, Andreas Kulik, Karen Harms, Philipp Klahn, Jung-Won Youn, Frank Surup and Yvonne Mast\*

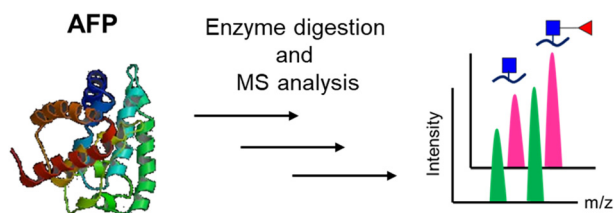
1064



### Reduction-cleavable desferrioxamine B pulldown system enriches Ni(II)-superoxide dismutase from a *Streptomyces* proteome

Jenny Ni, James L. Wood, Melanie Y. White, Norbert Lihi, Todd E. Markham, Joseph Wang, Peter T. Chivers and Rachel Codd\*

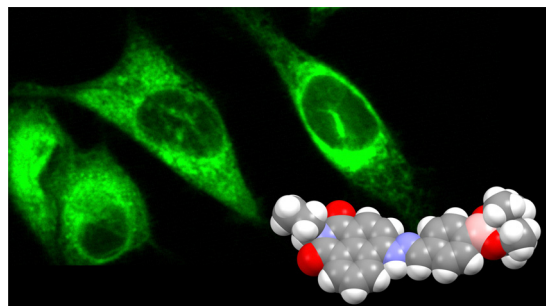
1073



### Quantitative mass spectrometric analysis of hepatocellular carcinoma biomarker alpha-fetoprotein

Chen-Chun Chen, Han-Wen Huang, Bo-Rui Chen and Chi-Huey Wong\*

1082



### Fluorescent naphthalimide boronates as theranostics: structural investigations, confocal fluorescence and multiphoton fluorescence lifetime imaging microscopy in living cells

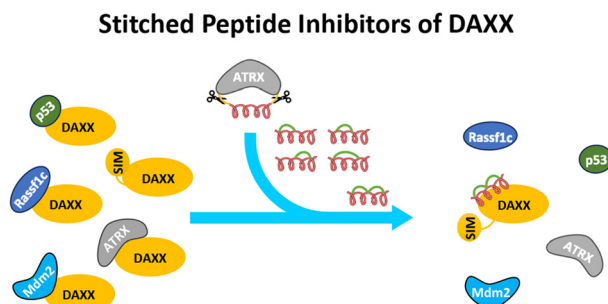
Megan J. Green, Haobo Ge, Stephen E. Flower, Charareh Pourzand, Stanley W. Botchway, Hui-Chen Wang, Navaratnarajah Kuganathan, Gabriele Kociok-Köhn, Meng Li, Suying Xu,\* Tony D. James\* and Sofia I. Pascu\*



1096

## Stitched peptides as potential cell permeable inhibitors of oncogenic DAXX protein

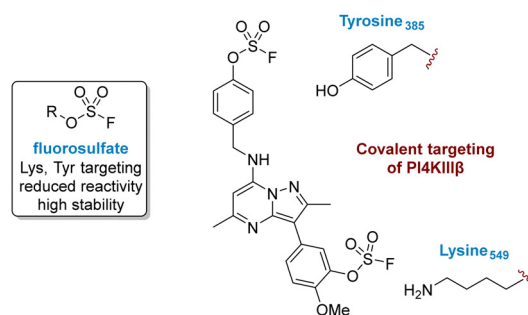
Clare Jelinska,\* Srinivasaraghavan Kannan, Yuri Frosi, Siti Radhiah Ramlan, Fernaldo Winnerdy, Rajamani Lakshminarayanan, Charles W Johannes, Christopher J Brown, Anh-Tuan Phan, Daniela Rhodes and Chandra S Verma\*



1111

## Covalent targeting of non-cysteine residues in PI4KIIIβ

Brett Cosgrove, Emma K. Grant, Sophie Bertrand, Kenneth D. Down, Don O. Somers, John P. Evans, Nicholas C. O. Tomkinson\* and Michael D. Barker\*



1123

## An enhanced biophysical screening strategy to investigate the affinity of ASOs for their target RNA

Rouven Stulz, Michael Lerche, Olivia Luige, Agnes Taylor, Stefan Geschwindner and Alice Ghidini\*

