Go Mobile

CJO Mobile (CJOm) is a streamlined Cambridge Journals Online (CJO) for smartphones and other small mobile devices



- Use CJOm to access all journal content including *FirstView* articles which are published online ahead of print
- Access quickly and easily thanks to simplified design and low resolution images
- Register for content alerts or save searches and articles – they will be available on both CJO and CJOm
- Your device will be detected and automatically directed to CJOm via: journals.cambridge.org



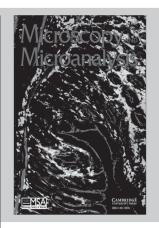
Microscopy and Microanalysis

Published for the Microscopy Society of America

Editor

Robert L. Price, University of South Carolina, USA

Microscopy and Microanalysis, a peer-reviewed bimonthly, publishes original research papers in the fields of microscopy, imaging, and compositional analysis. This distinguished international forum is intended for microscopists in both biology and materials science. The journal provides significant articles that describe new and existing techniques and instrumentation, as well as the applications of these to the imaging and analysis of microstructure. *Microscopy and Microanalysis* also includes review articles, short communications, letters to the editor, and book reviews.



Microscopy and Microanalysis is available online at: http://journals.cambridge.org/mam

To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions_newyork@cambridge.org

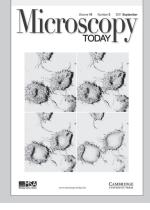
Free email alerts Keep up-to-date with new material – sign up at journals.cambridge.org/register

For free online content visit: http://journals.cambridge.org/mam



Microscopy Today

Published for the Microscopy Society of America



Editor-in-Chief Charles E. Lyman, Lehigh University, USA

Microscopy Today, the official magazine of the Microscopy Society of America (MSA), is produced six times a year alternating with the *Microscopy and Microanalysis* journal. Published since 1992, *Microscopy Today* (*MTO*) is a controlled-circulation magazine. Although not a peer-reviewed publication, *MTO* has a strong Editorial Board and a high general standard of material. *MTO* magazine attracts authors from many disparate fields in both biological and materials sciences. *Microscopy Today* is available online at: http://journals.cambridge.org/mto

To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions_newyork@cambridge.org

Free email alerts Keep up-to-date with new material – sign up at journals.cambridge.org/register

For free online content visit: http://journals.cambridge.org/mto



Expert Reviews in Molecular Medicine

Published in association with the Centre for Applied Research in Educational Technologies (CARET)

Editor

Andrea Bowden, Centre for Applied Research in Educational Technologies, Cambridge, UK

Carolyn Elliss, Centre for Applied Research in Educational Technologies, Cambridge, UK

Expert Reviews in Molecular Medicine is an exciting online journal featuring high-quality reviews of the latest developments in this fast-growing field. Coverage includes gene therapy, immunotherapeutics, drug design, vaccines, genetic testing, pathogenesis, epidemiology, genomics, diagnostics and techniques. Reviews are published continually on the website. The journal's innovative functionality allows viewers to access not only the review articles, but also fully abstracted references, figures, photographs, tables, animations and molecular models. *Expert Reviews in Molecular Medicine* will be of interest to biomedical researchers, clinicians and students, as well as researchers in the pharmaceutical and biotechnology industries.

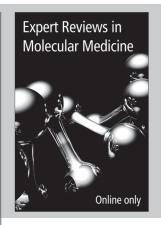
Price information

is available at: http://journals.cambridge.org/erm

Free email alerts

Keep up-to-date with new material – sign up at **http://journals.cambridge.org/alerts**

For free online content visit: http://journals.cambridge.org/erm



Expert Reviews in Molecular Medicine is available online at: http://journals.cambridge.org/erm

To subscribe contact Customer Services

in Cambridge: Phone +44 (0)1223 326070 Fax +44 (0)1223 325150 Email journals@cambridge.org

in New York: Phone +1 (845) 353 7500 Fax +1 (845) 353 4141 Email subscriptions_newyork@cambridge.org



COPYING

This journal is registered with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA. Organizations in the USA who are also registered with C.C.C. may therefore copy material (beyond the limits permitted by sections 107 and 108 of US copyright law) subject to payment to C.C.C. of the per-copy fee of \$15.00. This consent does not extend to multiple copying for promotional or commercial purposes. The Item-Fee Code for the publication is 0033–5835/11\$15.00+.10. *ISI Tear Sheet Service*, 3501 Market Street, Philadelphia, PA 19104, USA, is authorized to supply single copies of separate articles for private use only. Organizations authorized by the Copyright Licensing Agency may also copy material subject to the usual conditions. *For all other use*, permission must be sought from Cambridge or the American Branch of Cambridge University Press.

Quarterly Reviews of Biophysics is covered by relevant abstracting and indexing services including Biological Abstracts, Chemical Abstracts, Current Awareness in Biological Science, Current Contents, Excerpta Medica and Index Medicus.

CAMBRIDGE UNIVERSITY PRESS

The Edinburgh Building, Cambridge CB2 8RU, United Kingdom 32 Avenue of the Americas, New York, NY 10013–2473, USA 477 Williamstown Road, Port Melbourne, VIC 3207, Australia Ruiz de Alarcón 13, 28014 Madrid, Spain Dock House, The Waterfront, Cape Town 8001, South Africa

QUARTERLY REVIEWS OF Biophysics

VOL. 45 NO. 4 November 2012

CONTENTS

ANJA WINTER, ALICIA P. HIGUERUELO, MAY MARSH, ANNA SIGURDARDOTTIR, WILL R PITT AND TOM L. BLUNDELL Biophysical and computational fragment-based approaches to targeting protein–protein interactions: applications in structure-guided drug discovery	383
PENGYU REN, JAEHUN CHUN, DENNIS G. THOMAS, MICHAEL J. SCHNIEDERS, MARCELO MARUCHO, JIAJING ZHANG AND NATHAN A. BAKER	
Biomolecular electrostatics and solvation: a computational perspective	427
FRED DYDA, MICHAEL CHANDLER AND ALISON BURGESS HICKMAN The emerging diversity of transpososome architectures	493

FORTHCOMING PAPER

SHINA CAROLINE LYNN KAMERLIN, PANKAZ K. SHARMA, RAM B. PRASAD, AND ARIEH WARSHEL Why nature really chose phosphate

Cambridge Journals Online For further information about this journal please go to the journal website at: journals.cambridge.org/qrb

