

Editorial Board

Chair

P. R. Shepherd • Auckland

Vice Chair, The Americas

G. Salvesen • La Jolla, CA

Vice Chair, Asia-Pacific

T. Xu • Beijing

Vice Chair, Europe

D. R. Alessi • Dundee

Vice Chair Reviews

A. Toker • Boston, MA

Deputy Chairs

M. Blatt • Glasgow**L. J. Goodyear** • Boston, MA**S. V. Graham** • Glasgow**D. Hoekstra** • Groningen**S. Huber** • Urbana, IL**J. E. Ladbury** • Houston, TX**M. A. Lemmon** • Philadelphia, PA**C. MacKintosh** • Dundee**M. Murphy** • Cambridge**S. Roberts** • Buffalo, NY**M. A. Schwartz** • Charlottesville, VA**D. Tosh** • Bath**D. M. F. van Aalten** • Dundee**B. Vanhaesebroeck** • London**H. M. Wallace** • Aberdeen**M. F. White** • St Andrews

Publisher

P. J. Starley

Executive Editor

M. R. Thorne

Production Manager

M. D. Cunningham

Staff Editors

M. Banerjee**C. L. Curtis****E. A. G. Elloway****J. W. Mockridge****H. F. Roberts**

Administrative Editor, US Office

S. Schendel

J. Ariño (Barcelona)

T. K. Attwood (Manchester)

J. M. Backer (Bronx, NY)

B. M. Baker (Notre Dame, IN)

J. E. Bear (Chapel Hill, NC)

J. L. Blank (Cambridge, MA)

M. A. Bogoyevitch (Melbourne, VIC)

L. H. Boise (Atlanta, GA)

J. Bolaños (Salamanca)

P. J. Booth (Bristol)

L. Boscá (Madrid)

P. S. Brookes (Rochester, NY)

N. J. Buckley (London)

D. Burger (Geneva)

J. F. Cáceres (Edinburgh)

D. Carling (London)

M. Cascante (Barcelona)

Y.-G. Chen (Beijing)

L. Chernomordik (Bethesda, MD)

A. C. Clark (Raleigh, NC)

V. Darley-Usmar (Birmingham, AL)

M. J. Davies (Sydney)

B. Davis (Oxford)

L. A. Devi (New York, NY)

I. Dikic (Frankfurt)

R. Docampo (Athens, GA)

D. Doyle (Dublin)

C. S. Duckett (Ann Arbor, MI)

A. F. Dulhunty (Canberra)

P. Fay (Rochester, NY)

S. Flitsch (Manchester)

P. G. W. Gettins (Chicago, IL)

R. Golsteyn (Lethbridge, AB)

B. Halliwell (Singapore)

J. M. Horowitz (Raleigh, NC)

E. Ikonen (Helsinki)

A. Imberty (Grenoble)

D. A. Jans (Monash)

D. Jordan (Peoria, IL)

M. G. Kazanietz (Philadelphia, PA)

Z. Knight (New York)

D. Komander (Cambridge)

D. W. Laird (London, Ont.)

J. H. Lakey (Newcastle upon Tyne)

K. Lingelbach (Marburg)

D. W. Litchfield (London, Ont.)

B. Luisi (Cambridge)

E. Manser (Singapore)

M. McManus (Palmerston North)

J. Miernyk (Columbia, MO)

E. T. Morgan (Atlanta, GA)

I. Morgan (Glasgow)

A. J. Morris (Lexington, KY)

M. Muckenthaler (Heidelberg)

B. Mulloy (South Mimms)

A. W. Munro (Manchester)

G. Murphy (Cambridge)

H. Y. Naim (Hannover)

J. Naismith (St Andrews)

W. Ogawa (Kobe)

G. Panayotou (Vare)

S. Patel (London)

G. Pavitt (Manchester)

N. D. Perkins (Newcastle)

P. F. Pilch (Boston, MA)

W. C. Plaxton (Kingston, Ont.)

S. Ponnambalam (Leeds)

R. Y. Poon (Hong Kong)

B. Potter (Bath)

Z. Radić (La Jolla, CA)

D. R. Richardson (Sydney)

K. Rittinger (London)

M. F. Roberts (Boston, MA)

J. M. Sanchez-Ruiz (Granada)

R. Sasisekharan (Cambridge, MA)

N. Savery (Bristol)

J. R. Sayers (Sheffield)

P. T. Schumacker (Chicago, IL)

M. C. Seabra (London)

F. J. Sharom (Guelph, Ont.)

G. S. Shelness (Winston-Salem, NC)

H. Shimano (Tsukuba City)

J. Slack (Minneapolis, MN)

E. Smythe (Sheffield)

S. Spiegel (Richmond, VA)

S. Stack (Columbia, MO)

W. M. Stark (Glasgow)

H. Stenmark (Oslo)

C. Tickle (Bath)

N. K. Tonks (Cold Spring Harbor, NY)

C. Tournier (Manchester)

C. Troy (New York, NY)

H. D. Ulrich (South Mimms)

M. van der Woude (York)

A. J. Vidal-Puig (Cambridge)

H. J. Vogel (Calgary)

M. Welham (Bath)

S. Whitney (Canberra)

D. Winterbourn (Christchurch, NZ)

C. Withers (London)

D. Wu (Guangzhou)

A. Xu (Hong Kong)

H. Xue (Shanghai)

I. Zachary (London)

C. Zurzolo (Paris)



- Journal compilation © 2010 Biochemical Society
- The *Biochemical Journal* (ISSN 0264-6021 for print/online journal; ISSN 1470-8728 for online only journal) is published and distributed by Portland Press Limited on behalf of the Biochemical Society (the owner), and appears twice monthly (24 issues).
- **Editorial and publishing offices:** *Biochemical Journal*, Portland Press Limited, Third Floor, Charles Darwin House, 12 Roger Street, London WC1N 2JL, U.K.
- **US agent:** c/o Mercury International, 365 Blair Road, Avenel, NJ 07001, U.S.A.
- **Subscriptions department:** Portland Customer Services, P.O. Box 32, Commerce Way, Colchester CO2 8HP, U.K.
- All rights reserved. Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act, 1988, this publication may be reproduced, stored or transmitted, in any forms or by any means, only with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms of permissions granted by copyright clearing houses such as the Copyright Licensing Agency (U.K.) or the Copyright Clearance Center (U.S.A.). The CCC item-fee code for this publication is 0264-6021/2010/\$50.00 + 0.00. Inquiries concerning reproduction outside those terms should be sent to the publishers at the above-mentioned address.
- Although, at the time of going to press, the information contained in this publication is believed to be correct, neither the authors nor the editors nor the publisher assume any responsibility for any errors or omissions herein contained. Opinions expressed in articles are not necessarily those of the editors, the publisher or the owner.
- Periodicals postage paid at Rahway, NJ, U.S.A.
- **Postmaster:** send address corrections to *Biochemical Journal*, c/o Mercury International, 365 Blair Road, Avenel, NJ 07001, U.S.A.
- **Cover design:** Angie Moyes (www.fuz.co.uk).
- **Cover image credits:** Sharon M. Stack, University of Missouri; Carmen A. Mannella, Research and Technology Wadsworth Center, Albany, NY; Nottingham Arabidopsis Stock Centre (NASC); G. P. Côté, Kingston, Ont.; G. Salvesen, La Jolla; Dr Gordon Beahes, Newcastle University.

● **General policy** The *Biochemical Journal* publishes papers in English in all fields of biochemistry and cellular and molecular biology, provided that they make a sufficient contribution to knowledge in these fields. Papers may include new results obtained experimentally, descriptions of new experimental methods of biochemical importance, or new interpretations of existing results. Novel theoretical contributions will be considered, although these papers should also contain some experimental testing of the theory. All work presented should have as its aim the development of biochemical concepts rather than the mere recording of facts. Preliminary, confirmatory or inconclusive work will not be published. The *Biochemical Journal* will not publish material that has been wholly or largely published elsewhere, even as a preliminary communication or in unrefereed symposium proceedings or on the World Wide Web (WWW); equally, fragmentation of research into the 'least publishable unit' is discouraged.

Submission of a paper implies that it has been approved by all the named authors, that all persons entitled to authorship have been so named, that it reports unpublished work that is not under consideration elsewhere, and that if the paper is accepted for publication the authors will transfer to the Biochemical Society the copyright in the paper, which will then not be published elsewhere in the same form, in any language, without the consent of the Society. Authors will be required to sign an undertaking to these effects.

Authors may suggest potential reviewers for their papers, but the journal is under no obligation to follow such suggestions. Authors may also specify the names of those they wish to be excluded from the review process, and such wishes are usually respected unless, in the opinion of the journal, such a request unreasonably excludes all the expertise available to it in that scientific area.

To allow the reviewers to assess possible overlap with previous work, all submitted papers must be accompanied by duplicate copies of the author's relevant published work, including that on the WWW, and of all related papers in press or under editorial consideration in this or other journals.

The following types of paper are included in the journal.

● **Research Papers** are the normal form of publication, and may be of any length that is justified by their content. However, because of pressure for space in the journal, no paper, whatever its scientific merits, will be accepted if it exceeds the minimum length required for

precision in describing the experiments and clarity in interpreting them. As a guide, most Research Papers published in the *Biochemical Journal* are of between six and eight printed pages. A concise well-written paper tends to be published more rapidly.

● **Accelerated Publications (APs)** are short (normally four printed pages) papers bringing particularly novel and significant findings to the attention of the research community. It is intended that a decision on acceptance or rejection will be made within 10 working days of receipt, and publication of accepted APs in an issue will follow within 2 months. APs receive full but accelerated reviewing. The criteria of 'novelty and significance' are strictly enforced, and papers may be rejected solely on the grounds of lack of novelty and significance. APs are not a path to accelerated publication of sound but non-urgent material. Authors must include in their letter of submission a brief statement of why they believe their AP merits accelerated treatment. Colour figures will be published free of charge in APs, provided the use of colour is deemed scientifically necessary by the reviewers.

● **Reviews** will usually be solicited, although unsolicited reviews will be considered for publication. Prospective writers of reviews should first consult the Reviews Editor, via the editorial office, and should enclose a short (one page) summary of the area they propose to cover.

● **Procedure for submission** These instructions do not replace the official *Biochemical Journal* Instructions to Authors (<http://www.BiochemJ.org>). Authors are encouraged to refer to these for overall guidelines on submitting a paper. Before preparing papers for the journal, authors should consult a current issue to make themselves familiar with the general format, such as the use of cross-headings, layout of tables and figures and citation of references. A full page of text in the *Biochemical Journal* contains approximately 1200 words; when calculating the printed length of papers, allowance must be made for the space occupied by tables and figures and the number of text words reduced accordingly.

The numerical system of references must be used. A reference to 'unpublished work' must be accompanied by the names of all persons concerned; a reference to a 'personal communication' must be supported by written permission for the quotation from the person or persons concerned; both of these types of citation are permitted in the text only, not in the list of references.

● **Submit manuscripts online** Authors should submit manuscripts electronically using the Online Submission and Review System available at <http://www.BiochemJ.org/submit/>

● **Immediate Publications** Manuscripts are published online in PDF format as soon as they are accepted, unless on submission the author requests that this not be done. Immediate Publications are listed in and accessible through Medline, and are freely available to anyone with Internet access.

● **Opt2Pay** Choose to make your paper freely available. For more information see www.biochemj.org.

● **Queries and correspondence** Authors in the Americas should address all queries and correspondence about their submission to: Dr Sharon Schendel, BJ USA, The Sanford-Burnham Institute for Medical Research, 10901 N. Torrey Pines Road, La Jolla, CA 92037, U.S.A. (telephone +1 858 795 5283; fax +1 858 795 5284; email editorial@biochemjusa.org). Authors in the U.K., the rest of Europe, Japan and the rest of the world should contact: The Publisher, *Biochemical Journal*, Portland Press Limited, Third Floor, Charles Darwin House, 12 Roger Street, London WC1N 2JL, U.K. (telephone +44 20 7685 2410; fax +44 20 7685 2469; email editorial@portlandpress.com).

● **Colour figures** Colour figures are published free of charge provided that the corresponding author on the published paper has been a member of the Biochemical Society for at least 2 years and that the use of colour is deemed scientifically necessary by the reviewers. Otherwise the charges are £550 for the first colour figure and £300 for each subsequent colour figure.

● **Multimedia adjuncts** The *Biochemical Journal* Online offers authors the opportunity to enhance their papers with multimedia adjuncts (e.g. time-lapse movies, three-dimensional structures, animated schemes). These will be submitted to peer review alongside the manuscript. To submit a paper with a multimedia adjunct, please attach the file when you submit your manuscript electronically. Preferred formats are QuickTime for time-lapse movies, PDB for structures and Flash for animated schemes. There is no extra charge associated with the publication of a multimedia adjunct online.

● **COPE** The *Biochemical Journal* is a member of the Committee on Publication Ethics and endorses its guidelines, which are available at <http://publicationethics.org.uk>

Other information

The *Biochemical Journal* is published and distributed by Portland Press Limited on behalf of the Biochemical Society. It is published twice monthly; in 2011 volumes 433–440 (three parts each) will appear. The subscription also includes an author and key-word index.

● **Abstracted by/indexed in:** BIOBASE, BIOSIS, CAB International, Chemical Abstracts Service, Current Contents, EMBASE, International Food Information Service, Medline/Index Medicus, Proquest Information & Learning, Science Citation Index.

● **Subscription rates** Institutional subscription rates for 2011 are shown below. Subscribers to the *Biochemical Journal* can subscribe additionally to *Biochemical Society Transactions* on a joint subscription at a reduced rate (see www.portlandpress.com for further details). Terms are cash with order (US\$ in N. America, £ sterling for rest of the world, or US\$ equivalent at current rate of exchange; subscribers in the EU may pay in £ sterling or Euros), or against pro forma invoice. Orders should be sent to the address

shown, to your usual agent or purchased online at www.portlandpress.com.

	N. America	Rest of world	Euro price
One year (8 vols)			
Print and online	US\$4439	£2373	€3812
Online only	US\$3995	£2136	€3430
Single issues (print only)	US\$235	£119	€202

Overseas rates include airfreight delivery. Airspeeded delivery is available at an additional cost of £80/€101.

Value Added Tax (VAT) on online-only and 'combined' subscriptions is due on supplies to subscribers within the UK, and to non-registered subscribers elsewhere in the EU. If in the EU please state your VAT number otherwise VAT may be charged at the appropriate national rate.

● **Electronic back archive** This is freely available to all users with Internet access.

● **Microfiche and back issues** Volumes 102–408 of the *Biochemical Journal* are available

on microfiche. Back issues are also available. Further details may be obtained from the address below.

● Subscription Department

Portland Customer Services
P.O. Box 32, Commerce Way
Colchester CO2 8HP, Essex, U.K.
(telephone 01206 796351; fax 01206 799331;
email sales@portland-services.com).

● **Advertising** Enquiries about advertising should be addressed to: Mark Burgess, Editorial Department, Portland Press Limited Third Floor, Charles Darwin House, 12 Roger Street, London WC1N 2JL, U.K., tel.: +44 (0)20 7685 2410; fax: +44 (0)20 7685 2469; email: editorial@portlandpress.com

● The paper and cover-boards used in this journal are sourced from sustainable, managed and renewed commercial forests, and are fully recyclable. The bleaching process used for the pulp is 100% ECF (elemental chlorine free).

Reviews**The Golgi apparatus: an organelle with multiple complex functions**

Published on the Internet 15 December 2010,
doi:10.1042/BJ20101058

C. Wilson, R. Venditti, L.R. Rega, A. Colanzi,
G. D'Angelo and M.A. De Matteis



1–9

Exploring a role for heteromerization in GPCR signalling specificity

Published on the Internet 15 December 2010,
doi:10.1042/BJ20100458

R. Rozenfeld and L.A. Devi

11–18

Rescuing neurons in prion disease

Published on the Internet 15 December 2010,
doi:10.1042/BJ20101323

N.C. Verity and G.R. Mallucci



19–29

E2s: structurally economical and functionally replete

Published on the Internet 15 December 2010,
doi:10.1042/BJ20100985

D.M. Wenzel, K.E. Stoll and R.E. Klevit



31–42

Research Papers

PKC ζ -interacting protein ZIP3 is generated by intronic polyadenylation, and is expressed in the brain and retina of the rat

Published as BJ Immediate Publication 28 October 2010,
doi:10.1042/BJ20101111

A. Urbanczyk, A. Jünemann and R. Enz

43–50

Contrasting effects of ERK on tight junction integrity in differentiated and under-differentiated Caco-2 cell monolayers

Published as BJ Immediate Publication 20 October 2010,
doi:10.1042/BJ20100249

S. Aggarwal, T. Suzuki, W.L. Taylor, A. Bhargava and R.K. Rao



51–63

Phosphorylation of bacterial-type phosphoenolpyruvate carboxylase at Ser⁴²⁵ provides a further tier of enzyme control in developing castor oil seeds

Published as BJ Immediate Publication 15 October 2010,
doi:10.1042/BJ20101361

B. O'Leary, S.K. Rao and W.C. Plaxton



65–74

Specific amino acids in the BAR domain allow homodimerization and prevent heterodimerization of sorting nexin 33

Published as BJ Immediate Publication 22 October 2010,
doi:10.1042/BJ20100709

B. Dislich, M.E. Than and S.F. Lichtenthaler



75–83

The structure of CYP101D2 unveils a potential path for substrate entry into the active site

Published as BJ Immediate Publication 15 October 2010,
doi:10.1042/BJ20101017

W. Yang, S.G. Bell, H. Wang, W. Zhou, M. Bartlam, L.-L. Wong and Z. Rao



85–93

The pancreatic islet β -cell-enriched transcription factor Pdx-1 regulates *Slc30a8* gene transcription through an intronic enhancer

Published as BJ Immediate Publication 14 October 2010,
doi:10.1042/BJ20101488

L.D. Pound, Y. Hang, S.A. Sarkar, Y. Wang, L.A. Milam, J.K. Oeser, R.L. Printz, C.E. Lee, R. Stein, J.C. Hutton and R.M. O'Brien



95–105

Escherichia coli glycogen genes are organized in a single *glgBXCAP* transcriptional unit possessing an alternative suboperonic promoter within *glgC* that directs *glgAP* expression




Published as BJ Immediate Publication 29 October 2010,
doi:10.1042/BJ20101186

M. Montero, G. Almagro, G. Eydallin, A.M. Viale, F.J. Muñoz, A. Bahaji, J. Li, M. Rahimpour, E. Baroja-Fernández and J. Pozueta-Romero



107–117

Contents

- Complement 1q-binding protein inhibits the mitochondrial permeability transition pore and protects against oxidative stress-induced death
Published as BJ Immediate Publication 15 October 2010, doi:10.1042/BJ20101431
- Cell surface heparan sulfates mediate internalization of the PWWP/HATH domain of HDGF via macropinocytosis to fine-tune cell signalling processes involved in fibroblast cell migration
Published as BJ Immediate Publication 22 October 2010, doi:10.1042/BJ20100589
- Spermine synthase activity affects the content of decarboxylated S-adenosylmethionine
Published as BJ Immediate Publication 15 October 2010, doi:10.1042/BJ20101228
- PMA-induced up-regulation of TBX3 is mediated by AP-1 and contributes to breast cancer cell migration
Published as BJ Immediate Publication 13 October 2010, doi:10.1042/BJ20100886
- SUMO modification selectively regulates transcriptional activity of peroxisome-proliferator-activated receptor γ in C2C12 myotubes
Published as BJ Immediate Publication 18 October 2010, doi:10.1042/BJ20100749
- Mesohaem substitution reveals how haem electronic properties can influence the kinetic and catalytic parameters of neuronal NO synthase
Published as BJ Immediate Publication 15 October 2010, doi:10.1042/BJ20101353
- Expression of the cannabinoid system in muscle: effects of a high-fat diet and CB₁ receptor blockade
Published as BJ Immediate Publication 18 October 2010, doi:10.1042/BJ20100751
- Phosphorylation-dependent association of the G4-1/G5PR regulatory subunit with IKK β negatively modulates NF- κ B activation through recruitment of protein phosphatase 5
Published as BJ Immediate Publication 6 October 2010, doi:10.1042/BJ20100247
- The C-terminal basic residues contribute to the chemical- and voltage-dependent activation of TRPA1
Published as BJ Immediate Publication 14 October 2010, doi:10.1042/BJ20101256
- Inactivation of eukaryotic initiation factor 5A (eIF5A) by specific acetylation of its hypusine residue by spermidine/spermine acetyltransferase 1 (SSAT1)
Published as BJ Immediate Publication 13 October 2010, doi:10.1042/BJ20101322
- Ephrin-B3 binds to a sulfated cell-surface receptor
Published as BJ Immediate Publication 6 October 2010, doi:10.1042/BJ20100865
- Androgen stimulates glycolysis for *de novo* lipid synthesis by increasing the activities of hexokinase 2 and 6-phosphofructo-2-kinase/fructose-2,6-bisphosphatase 2 in prostate cancer cells
Published as BJ Immediate Publication 19 October 2010, doi:10.1042/BJ20101104
- A.M. McGee and C.P. Baines 119–125
- C.-H. Wang, F. Davamani, S.-C. Sue, S.-C. Lee, P.-I. Wu, F.-M. Tang, C. Shih, T.-h. Huang and W.-g. Wu 127–138
 online data
- A.E. Pegg, X. Wang, C.E. Schwartz and D.E. McCloskey 139–144
- S. Mowla, R. Pinnock, V.D. Leaner, C.R. Goding and S. Prince 145–153
- S.S. Chung, B.Y. Ahn, M. Kim, J.H. Kho, H.S. Jung and K.S. Park 155–161
 online data
- J. Tejero, A. Biswas, M.M. Haque, Z.-Q. Wang, C. Hemann, C.L. Varnado, Z. Novince, R. Hille, D.C. Goodwin and D.J. Stuehr 163–174
- A. Crespillo, J. Suárez, F.J. Bermúdez-Silva, P. Rivera, M. Vida, M. Alonso, A. Palomino, M.A. Lucena, A. Serrano, M. Pérez-Martín, M. Macías, P. Fernández-Llébrez and F. Rodríguez de Fonseca 175–185
 online data
- C.-W. Chiang, W.-K. Liu, C.-W. Chiang and C.-K. Chou 187–196
- A. Samad, L. Sura, J. Benedikt, R. Ettrich, B. Minofar, J. Teisinger and V. Vlachova 197–204
 online data
- S.B. Lee, J.H. Park, J.E. Folk, J.A. Deck, A.E. Pegg, M. Sokabe, C.S. Fraser and M.H. Park 205–213
- H.L. Holen, L. Zernichow, K.E. Fjelland, I.M. Evenroed, K. Prydz, H. Tveit and H.-C. Aasheim 215–223
- J.-S. Moon, W.-J. Jin, J.-H. Kwak, H.-J. Kim, M.-J. Yun, J.-W. Kim, S. W. Park and K.-S. Kim 225–233
 online data

Procyanidin B3, an inhibitor of histone acetyltransferase, enhances the action of antagonist for prostate cancer cells via inhibition of p300-dependent acetylation of androgen receptor
Published as BJ Immediate Publication 18 October 2010,
doi:10.1042/BJ20100980

K.-C. Choi, S. Park, B.J. Lim, A.-R. Sung, Y.-H. Lee, M. Shiota, A. Yokomizo, S. Naito, Y. Na and H.-G. Yoon



235–244

Regulation of unfolded protein response modulator XBP1s by acetylation and deacetylation
Published as BJ Immediate Publication 18 October 2010,
doi:10.1042/BJ20101293

F.-M. Wang, Y.-J. Chen and H.-J. Ouyang

245–252

Editorial Board

Chair

P. R. Shepherd • Auckland

Vice Chair, The Americas

G. Salvesen • La Jolla, CA

Vice Chair, Asia-Pacific

T. Xu • Beijing

Vice Chair, Europe

D. R. Alessi • Dundee

Vice Chair Reviews

A. Toker • Boston, MA

Deputy Chairs

M. Blatt • Glasgow**L. J. Goodyear** • Boston, MA**S. V. Graham** • Glasgow**D. Hoekstra** • Groningen**S. Huber** • Urbana, IL**J. E. Ladbury** • Houston, TX**M. A. Lemmon** • Philadelphia, PA**C. MacKintosh** • Dundee**M. Murphy** • Cambridge**S. Roberts** • Buffalo, NY**M. A. Schwartz** • Charlottesville, VA**D. Tosh** • Bath**D. M. F. van Aalten** • Dundee**B. Vanhaesebroeck** • London**H. M. Wallace** • Aberdeen**M. F. White** • St Andrews

Publisher

P. J. Starley

Executive Editor

M. R. Thorne

Production Manager

M. D. Cunningham

Staff Editors

M. Banerjee**C. L. Curtis****E. A. G. Elloway****J. W. Mockridge****H. F. Roberts**

Administrative Editor, US Office

S. Schendel

J. Ariño (Barcelona)

T. K. Attwood (Manchester)

J. M. Backer (Bronx, NY)

B. M. Baker (Notre Dame, IN)

J. E. Bear (Chapel Hill, NC)

J. L. Blank (Cambridge, MA)

M. A. Bogoyevitch (Melbourne, VIC)

L. H. Boise (Atlanta, GA)

J. Bolaños (Salamanca)

P. J. Booth (Bristol)

L. Boscá (Madrid)

P. S. Brookes (Rochester, NY)

N. J. Buckley (London)

D. Burger (Geneva)

J. F. Cáceres (Edinburgh)

D. Carling (London)

M. Cascante (Barcelona)

Y.-G. Chen (Beijing)

L. Chernomordik (Bethesda, MD)

A. C. Clark (Raleigh, NC)

V. Darley-Usmar (Birmingham, AL)

M. J. Davies (Sydney)

B. Davis (Oxford)

L. A. Devi (New York, NY)

I. Dikic (Frankfurt)

R. Docampo (Athens, GA)

D. Doyle (Dublin)

C. S. Duckett (Ann Arbor, MI)

A. F. Dulhunty (Canberra)

P. Fay (Rochester, NY)

S. Flitsch (Manchester)

P. G. W. Gettins (Chicago, IL)

R. Golsteyn (Lethbridge, AB)

B. Halliwell (Singapore)

J. M. Horowitz (Raleigh, NC)

E. Ikonen (Helsinki)

A. Imberty (Grenoble)

D. A. Jans (Monash)

D. Jordan (Peoria, IL)

M. G. Kazanietz (Philadelphia, PA)

Z. Knight (New York)

D. Komander (Cambridge)

D. W. Laird (London, Ont.)

J. H. Lakey (Newcastle upon Tyne)

K. Lingelbach (Marburg)

D. W. Litchfield (London, Ont.)

B. Luisi (Cambridge)

E. Manser (Singapore)

M. McManus (Palmerston North)

J. Miernyk (Columbia, MO)

E. T. Morgan (Atlanta, GA)

I. Morgan (Glasgow)

A. J. Morris (Lexington, KY)

M. Muckenthaler (Heidelberg)

B. Mulloy (South Mimms)

A. W. Munro (Manchester)

G. Murphy (Cambridge)

H. Y. Naim (Hannover)

J. Naismith (St Andrews)

W. Ogawa (Kobe)

G. Panayotou (Vare)

S. Patel (London)

G. Pavitt (Manchester)

N. D. Perkins (Newcastle)

P. F. Pilch (Boston, MA)

W. C. Plaxton (Kingston, Ont.)

S. Ponnambalam (Leeds)

R. Y. Poon (Hong Kong)

B. Potter (Bath)

Z. Radić (La Jolla, CA)

D. R. Richardson (Sydney)

K. Rittinger (London)

M. F. Roberts (Boston, MA)

J. M. Sanchez-Ruiz (Granada)

R. Sasisekharan (Cambridge, MA)

N. Savery (Bristol)

J. R. Sayers (Sheffield)

P. T. Schumacker (Chicago, IL)

M. C. Seabra (London)

F. J. Sharom (Guelph, Ont.)

G. S. Shelness (Winston-Salem, NC)

H. Shimano (Tsukuba City)

J. Slack (Minneapolis, MN)

E. Smythe (Sheffield)

S. Spiegel (Richmond, VA)

S. Stack (Columbia, MO)

W. M. Stark (Glasgow)

H. Stenmark (Oslo)

C. Tickle (Bath)

N. K. Tonks (Cold Spring Harbor, NY)

C. Tournier (Manchester)

C. Troy (New York, NY)

H. D. Ulrich (South Mimms)

M. van der Woude (York)

A. J. Vidal-Puig (Cambridge)

H. J. Vogel (Calgary)

M. Welham (Bath)

S. Whitney (Canberra)

C. Winterbourn (Christchurch, NZ)

D. Withers (London)

D. Wu (Guangzhou)

A. Xu (Hong Kong)

H. Xue (Shanghai)

I. Zachary (London)

C. Zurzolo (Paris)

PORTLAND PRESS Ltd

Third Floor, Charles Darwin House
12 Roger Street
London WC1N 2JL, U.K.



ISSN 0264-6021

Index of Authors

	PAGE		PAGE		PAGE		PAGE
Aasheim, H.-C.	215	Hang, Y.	95	Naito, S.	235	Stuehr, D. J.	163
Aggarwal, S.	51	Haque, M. M.	163	Novince, Z.	163	Suárez, J.	175
Ahn, B. Y.	155	Hemann, C.	163			Sue, S.-C.	127
Almagro, G.	107	Hille, R.	163	O'Brien, R. M.	95	Sung, A.-R.	235
Alonso, M.	175	Holen, H. L.	215	Oeser, J. K.	95	Sura, L.	197
		Huang, T.-h.	127	O'Leary, B.	65	Suzuki, T.	51
		Hutton, J. C.	95	Ouyang, H.-J.	245		
Bahaji, A.	107					Tang, F.-M.	127
Baines, C. P.	119	Jin, W.-J.	225			Taylor, W. L.	51
Baroja-Fernández, E.	107	Jünemann, A.	43	Palomino, A.	175	Teisinger, J.	197
Bartlam, M.	85	Jung, H. S.	155	Park, J. H.	205	Tejero, J.	163
Bell, S. G.	85			Park, K. S.	155	Than, M. E.	75
Benedikt, J.	197			Park, M. H.	205	Than, M. E.	75
Bermúdez-Silva, F. J.	175	Kho, J. H.	155	Park, S. W.	225	Tveit, H.	215
Bhargava, A.	51	Kim, H.-J.	225	Park, S.	235		
Biswas, A.	163	Kim, J.-W.	225	Pegg, A. E.	139, 205	Urbanczyk, A.	43
		Kim, K.-S.	225	Pérez-Martín, M.	175		
Chen, Y.-J.	245	Kim, M.	155	Pinnock, R.	145	Varnado, C. L.	163
Chiang, Chao-Wei	187	Klevit, R. E.	31	Plaxton, W. C.	65	Venditti, R.	1
Chiang, Chi-Wu	187	Kwak, J.-H.	225	Pound, L. D.	95	Verity, N. C.	19
Choi, K.-C.	235			Pozueta-Romero, J.	107	Viale, A. M.	107
Chou, C.-K.	187	Leaner, V. D.	145	Prince, S.	145	Vida, M.	175
Chung, S. S.	155	Lee, C. E.	95	Printz, R. L.	95	Vlachova, V.	197
Colanzi, A.	1	Lee, S. B.	205	Prydz, K.	215		
Crespillo, A.	175	Lee, S.-C.	127			Wang, C.-H.	127
		Lee, Y.-H.	235	Rahimpour, M.	107	Wang, F.-M.	245
D'Angelo, G.	1	Li, J.	107	Rao, R. K.	51	Wang, H.	85
Davamani, F.	127	Lichtenthaler, S. F.	75	Rao, S. K.	65	Wang, X.	139
Deck, J. A.	205	Lim, B. J.	235	Rao, Z.	85	Wang, Y.	95
De Matteis, M. A.	1	Liu, W.-K.	187	Rega, L. R.	1	Wang, Z.-Q.	163
Deví, L. A.	11	Lucena, M. A.	175	Rivera, P.	175	Wenzel, D. M.	31
Dislich, B.	75			Rodríguez de Fonseca, F.	175	Wilson, C.	1
		Macias, M.	175	Rozenfeld, R.	11	Wong, L.-L.	85
Enz, R.	43	Mallucci, G. R.	19			Wu, P.-I.	127
Ettrich, R.	197	McCloskey, D. E.	139	Samad, A.	197	Wu, W.-g.	127
Evenroed, I. M.	215	McGee, A. M.	119	Sarkar, S. A.	95		
Eydallin, G.	107	Milam, L. A.	95	Schwartz, C. E.	139	Yang, W.	85
		Minofar, B.	197	Serrano, A.	175	Yokomizo, A.	235
Fernández-Llébrez, P.	175	Montero, M.	107	Shih, C.	127	Yoon, H.-G.	235
Fjelland, K. E.	215	Moon, J.-S.	225	Shiota, M.	235	Yun, M.-J.	225
Folk, J. E.	205	Mowla, S.	145	Sokabe, M.	205		
Fraser, C. S.	205	Muñoz, F. J.	107	Stein, R.	95	Zernichow, L.	215
		Na, Y.	235	Stoll, K. E.	31	Zhou, W.	85
Goding, C. R.	145						
Goodwin, D. C.	163						