

Biochemical Journal

The Biochemical Society, London © 2004

Volume 382, part 1

15 August 2004

<http://www.BiochemJ.org>

Editorial Board

Chair

G. Banting • Bristol

Vice Chair, The Americas

G. Salvesen • La Jolla

Reviews Editor

J. D. Scott • Portland, OR

Deputy Chairs

R. A. J. Challiss • Leicester

S. Gutteridge • Newark, DE

B. Henrissat • Marseille

D. Hoekstra • Groningen

N. M. Hooper • Leeds

J. P. Kehrer • Austin

K. H. Mayo • Minneapolis

M. J. O. Wakelam • Birmingham

H. M. Wallace • Aberdeen

M. P. Walsh • Calgary

Publisher

P. J. Starley

Production Editor

M. D. Cunningham

Senior Staff Editor

S. M. Hobday

Staff Editors

L. Ball

L. Johnson

J. W. Mockridge

L. M. Petty

M. R. Thorne

Editorial Assistant

E. A. G. Elloway

Administrative Editor, US Office

S. Schendel

D. R. Alessi (Dundee)

D. Attaix (Ceyrat)

G. J. Barritt (Adelaide)

J. L. Blank (Cambridge, MA)

M. Blatt (Glasgow)

P. G. Board (Canberra)

M. Bogyo (Stanford, CA)

M. Bollen (Leuven)

B. Brüne (Kaiserslautern)

D. Carling (London)

A. Clerk (London)

G. P. Côté (Kingston, Ont.)

J. R. Couchman (London)

W. Cramer (West Lafayette)

G. J. Davies (York)

D. A. Day (Nedlands)

H. Deckmyn (Kortrijk)

C. S. Duckett (Ann Arbor)

J. M. East (Southampton)

B. Engelmann (Munich)

R. M. Epanand (Hamilton, Ont.)

D. A. Fell (Oxford)

R. Ferraris (Newark, NJ)

B. Foxwell (London)

J.-M. Frère (Liège)

A. Galione (Oxford)

P. G. W. Gettins (Chicago)

D. A. F. Gillespie (Glasgow)

S. Goodbourn (London)

S. V. Graham (Glasgow)

P. A. Grimaldi (Nice)

B. Hallberg (Umeå)

P. I. Haris (Leicester)

L. Hedstrom (Waltham, MA)

F. G. Hegardt (Barcelona)

S. High (Manchester)

I. B. Holland (Orsay)

J. Hsuan (London)

W. Jessup (Sydney)

B. Kalyanaraman (Milwaukee)

M. G. Kazanietz (Philadelphia)

I. M. Kovach (Washington D.C.)

P. W. Kuchel (Sydney)

R. Leduc (Sherbrooke)

E. R. Levin (Long Beach, CA)

L. Machesky (Birmingham)

R. Marais (London)

P. Maurel (Montpellier)

M. Meisterernst (Munich)

H. Mellor (Bristol)

J. S. Mort (Montreal)

W. Müller-Esterl (Frankfurt)

M. P. Murphy (Cambridge)

L. M. Obeid (Charleston)

M. Parenti (Monza)

M. A. J. Parry (Harpenden)

M. Paulsson (Cologne)

L. Persson (Lund)

A. D. Postle (Southampton)

N. J. Pyne (Glasgow)

S. Roberts (Manchester)

G. A. Rutter (Bristol)

N. J. P. Ryba (Bethesda)

J. R. Sayers (Sheffield)

S. C. Sealfon (New York)

P. R. Shepherd (Auckland)

A. Sim (Callaghan, NSW)

R. J. Simpson (Parkville)

B. F. Sloane (Detroit)

C. W. Taylor (Cambridge)

K. F. Tipton (Dublin)

M. A. Titheradge (Brighton)

A. B. Tobin (Leicester)

A. Toker (Boston)

S. A. Tooze (London)

M. Torti (Pavia)

B. Vanhaesebroeck (London)

S. G. Ward (Bath)

J. F. Woessner (Miami)

S. J. Yeaman (Newcastle upon Tyne)

J. York (Durham, NC)

S. Yoshikawa (Akoh-Hyogo)



- The *Biochemical Journal* (ISSN 0264-6021 for print/online journal; ISSN 1470-8728 for online only journal) is published and distributed by Portland Press Ltd on behalf of the Biochemical Society (the owner), and appears twice monthly.
- **Editorial and publishing offices:** *Biochemical Journal*, 59 Portland Place, London W1B 1QW, U.K.
- **Biochemical Journal**, c/o Mercury Airfreight International Ltd, 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 0264-6021/2004/\$36.00 + 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 Airfreight International Ltd, 365 Blair Road, Avenel, NJ 07001, U.S.A.
- **Cover illustration:** Confocal image of cultured neonatal rat cardiomyocytes stimulated to induce hypertrophy and stained to show mAKAP in green, PDE4D3 in red, and actin in blue. For further information, see Carlisle Michel et al. (2004) *Biochem. J.* **381**, 587–592.

● **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 biochemical knowledge. 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 equally with papers dealing with experimental work. 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 refereed 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. Papers reporting nucleotide sequences only are not acceptable as APs. One colour figure will be published free of charge in APs; subsequent figures will cost £300 each.

● **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 typed 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.

● **Queries and correspondence** Authors in the Americas should address all queries and correspondence about their submission to: Dr Sharon Schendel, BJ USA, The Burnham Institute, 10901 N. Torrey Pines Road, La Jolla, CA 92037, U.S.A. (telephone +1 858 713 6283; fax +1 858 713 6284; 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*, 59 Portland Place, London W1B 1QW, U.K. (telephone +44 20 7637 5873; fax +44 20 7323 1136; email editorial@portlandpress.com).

● **Colour figures** The first colour figure is published at no charge provided that one author 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. Subsequent colour figures in the same paper cost £300 each.

● **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 and PDB for structures. There is no extra charge associated with the publication of a multimedia adjunct online.

Other information

The *Biochemical Journal* is published and distributed by Portland Press Ltd on behalf of the Biochemical Society. It is published twice monthly; in 2004 volumes 377–384 (three parts each) will appear. The subscription also includes an author and key-word index.

● **Subscription rates** Institutional subscription rates for 2004 are shown below. Subscribers to the *Biochemical Journal* can subscribe additionally to *Biochemical Society Transactions* and *Biotechnology and Applied Biochemistry* on a joint subscription at a reduced rate. 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 below, or through your usual agent.

	N. America	Rest of world	Euro price
One year (8 vols)			
Print and online	US\$2414	£1373	€2335
Online only	US\$2220	£1260	€2145
Print only	US\$2337	£1335	€2264
Single issues (print only)	US\$116	£67	€110

Overseas rates include airfreight delivery. Priority delivery is available at an additional cost of £58.80/€100.

VAT is due on some 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 102–336 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: Nicky Peacock, Mainline Media Ltd, The Barn, Oakley Hay Lodge Business Park, Great Folds Road, Great Oakley, Corby, Northamptonshire NN18 9AS, U.K. (telephone 01536 747333; email Nickyppmm@aol.com).

Reviews

- PTEN function: how normal cells control it and tumour cells lose it** N.R. Leslie and C.P. Downes 1–11

Published as BJ Immediate Publication 11 June 2004,
DOI 10.1042/BJ20040825

- Cortactin signalling and dynamic actin networks** R.J. Daly 13–25

Published as BJ Immediate Publication 9 June 2004,
DOI 10.1042/BJ20040737

Research Papers

- Glutamine availability up-regulates expression of the amino acid transporter protein ASCT2 in HepG2 cells and stimulates the ASCT2 promoter C.I. Bungard and J.D. McGivan 27–32

Published as BJ Immediate Publication 3 June 2004,
DOI 10.1042/BJ20040487

- Gene- and cell-type-specific effects of signal transduction cascades on metal-regulated gene transcription appear to be independent of changes in the phosphorylation of metal-response-element-binding transcription factor-1 H. Jiang, K. Fu and G.K. Andrews 33–41

Published as BJ Immediate Publication 14 May 2004,
DOI 10.1042/BJ20040504

- Expression of the gene for Dec2, a basic helix–loop–helix transcription factor, is regulated by a molecular clock system H. Hamaguchi, K. Fujimoto, T. Kawamoto, M. Noshiro, K. Maemura, N. Takeda, R. Nagai, M. Furukawa, S. Honma, K.-i. Honma, H. Kurihara and Y. Kato 43–50

Published as BJ Immediate Publication 17 May 2004,
DOI 10.1042/BJ20031760

- Membrane lipid biosynthesis in *Chlamydomonas reinhardtii*: expression and characterization of CTP:phosphoethanolamine cytidyltransferase W. Yang, C.B. Mason, S.V. Pollock, T. Lavezzi, J.V. Moroney and T.S. Moore 51–57

Published as BJ Immediate Publication 18 May 2004,
DOI 10.1042/BJ20040254

- Human PHOSPHO1 exhibits high specific phosphoethanolamine and phosphocholine phosphatase activities S.J. Roberts, A.J. Stewart, P.J. Sadler and C. Farquharson 59–65

Published as BJ Immediate Publication 3 June 2004,
DOI 10.1042/BJ20040511

- The *Drosophila melanogaster* homologue of the human histo-blood group P^k gene encodes a glycolipid-modifying α 1,4-N-acetylgalactosaminyltransferase J. Mucha, J. Domlatil, G. Lochnit, D. Rendić, K. Paschinger, G. Hinterkörner, A. Hofinger, P. Kosma and I.B.H. Wilson 67–74

Published as BJ Immediate Publication 7 May 2004,
DOI 10.1042/BJ20040535

- Endothelial lipase-modified high-density lipoprotein exhibits diminished ability to mediate SR-BI (scavenger receptor B type I)-dependent free-cholesterol efflux M. Gauster, O.V. Oskolkova, J. Innerlohinger, O. Glatter, G. Knipping and S. Frank 75–82

Published as BJ Immediate Publication 14 April 2004,
DOI 10.1042/BJ20031882

- Lysophosphatidic acid attenuates the cytotoxic effects and degree of peroxisome proliferator-activated receptor γ activation induced by 15-deoxy $\Delta^{12,14}$ -prostaglandin J₂ in neuroblastoma cells H.A. Rodway, A.N. Hunt, J.A. Kohler, A.D. Postle and K.A. Lillycrop 83–91

Published as BJ Immediate Publication 2 June 2004,
DOI 10.1042/BJ20040107

- Characterization of a sterol carrier protein 2/3-oxoacyl-CoA thiolase from the cotton leafworm (*Spodoptera littoralis*): a lepidopteran mechanism closer to that in mammals than that in dipterans H. Takeuchi, J.-H. Chen, J.R. Jenkins, M. Bun-Ya, P.C. Turner and H.H. Rees 93–100

Published as BJ Immediate Publication 18 May 2004,
DOI 10.1042/BJ20040717

G-protein-coupled receptor regulation of P2X ₁ receptors does not involve direct channel phosphorylation <i>Published as BJ Immediate Publication 14 May 2004, DOI 10.1042/BJ20031910</i>	C. Vial, A.B. Tobin and R.J. Evans	101–110
Analysis of two CBP (cAMP-response-element-binding protein-binding protein) interacting sites in GRIP1 (glucocorticoid-receptor-interacting protein), and their importance for the function of GRIP1 <i>Published as BJ Immediate Publication 12 May 2004, DOI 10.1042/BJ20040206</i>	S.-M. Huang and Y.-S. Cheng	111–119
Conformational changes in gastric H ⁺ /K ⁺ -ATPase monitored by difference Fourier-transform infrared spectroscopy and hydrogen/deuterium exchange <i>Published as BJ Immediate Publication 20 April 2004, DOI 10.1042/BJ20040277</i>	F. Scheirlinckx, V. Raussens, J.-M. Ruyschaert and E. Goormaghtigh	121–129
Free aminothiols, glutathione redox state and protein mixed disulphides in aging <i>Drosophila melanogaster</i> <i>Published as BJ Immediate Publication 14 May 2004, DOI 10.1042/BJ20040506</i>	I. Rebrin, A.-C.V. Bayne, R.J. Mockett, W.C. Orr and R.S. Sohal	131–136
Fructosamine 3-kinase-related protein and deglycation in human erythrocytes <i>Published as BJ Immediate Publication 12 May 2004, DOI 10.1042/BJ20040307</i>	F. Collard, E. Wiame, N. Bergans, J. Fortpied, D. Vertommen, F. Vanstapel, G. Delpierre and E. Van Schaftingen	137–143
Topology of the plastid Ndh complex and its NDH-F subunit in thylakoid membranes <i>Published as BJ Immediate Publication 5 May 2004, DOI 10.1042/BJ20031828</i>	L.M. Casano, H.R. Lascano, M. Martín and B. Sabater	145–155
Cell detachment and apoptosis induction of immortalized human prostate epithelial cells are associated with early accumulation of a 45 kDa nuclear isoform of clusterin <i>Published as BJ Immediate Publication 12 May 2004, DOI 10.1042/BJ20040158</i>	A.E. Caccamo, M. Scaltriti, A. Caporali, D. D'Arca, F. Scorcioni, S. Astancolle, M. Mangiola and S. Bettuzzi	157–168
Functional analysis of the CXXC motif using phage antibodies that cross-react with protein disulphide-isomerase family proteins <i>Published as BJ Immediate Publication 12 May 2004, DOI 10.1042/BJ20040116</i>	T. Kimura, A. Nishida, N. Ohara, D. Yamagishi, T. Horibe and M. Kikuchi	169–176
Expression of taurine transporter is regulated through the TonE (tonicity-responsive element)/TonEBP (TonE-binding protein) pathway and contributes to cytoprotection in HepG2 cells <i>Published as BJ Immediate Publication 14 May 2004, DOI 10.1042/BJ20031838</i>	T. Ito, Y. Fujio, M. Hirata, T. Takatani, T. Matsuda, S. Muraoka, K. Takahashi and J. Azuma	177–182
Kinetics of NO and O ₂ binding to a maleimide poly(ethylene glycol)-conjugated human haemoglobin <i>Published as BJ Immediate Publication 3 June 2004, DOI 10.1042/BJ20040156</i>	K.D. Vandegriff, A. Bellelli, M. Samaja, A. Malavalli, M. Brunori and R.M. Winslow	183–189
Topology of the substrate-binding site of a Lys ⁴⁹ -phospholipase A ₂ influences Ca ²⁺ -independent membrane-damaging activity <i>Published as BJ Immediate Publication 17 May 2004, DOI 10.1042/BJ20031946</i>	J.M. Sá, L. Chioato, T.L. Ferreira, A.H.C. de Oliveira, R. Ruller, J.C. Rosa, L.J. Greene and R.J. Ward	191–198
Interaction of activated Cdc42-associated tyrosine kinase ACK2 with HSP90 <i>Published as BJ Immediate Publication 17 May 2004, DOI 10.1042/BJ20040623</i>	W. Yang, J.M. Jansen, Q. Lin, S. Canova, R.A. Cerione and C. Childress	199–204
Characterization of Prismaticin-14, a novel matrix protein from the prismatic layer of the Japanese pearl oyster (<i>Pinctada fucata</i>) <i>Published as BJ Immediate Publication 7 May 2004, DOI 10.1042/BJ20040319</i>	M. Suzuki, E. Murayama, H. Inoue, N. Ozaki, H. Tohse, T. Kogure and H. Nagasawa	205–213
Quantitative description of the interaction between folate and the folate-binding protein from cow's milk <i>Published as BJ Immediate Publication 14 May 2004, DOI 10.1042/BJ20040411</i>	P.F. Nixon, M. Jones and D.J. Winzor	215–221
The pre-mRNA-splicing factor SF3a66 functions as a microtubule-binding and -bundling protein <i>Published as BJ Immediate Publication 14 May 2004, DOI 10.1042/BJ20040521</i>	K. Takenaka, H. Nakagawa, S. Miyamoto and H. Miki	223–230
Identification of a novel receptor for an invertebrate oxytocin/vasopressin superfamily peptide: molecular and functional evolution of the oxytocin/vasopressin superfamily <i>Published as BJ Immediate Publication 3 June 2004, DOI 10.1042/BJ20040555</i>	T. Kawada, A. Kanda, H. Minakata, O. Matsushima and H. Satake	231–237



Functional analysis of peroxisome-proliferator-responsive element motifs in genes of fatty acid-binding proteins <i>Published as BJ Immediate Publication 7 May 2004, DOI 10.1042/BJ20031340</i>	C. Schachtrup, T. Emmeler, B. Bleck, A. Sandqvist and F. Spener	239–245
<i>Mycobacterium tuberculosis</i> DnaA initiator protein: purification and DNA-binding requirements <i>Published as BJ Immediate Publication 12 May 2004, DOI 10.1042/BJ20040338</i>	A. Zawilak, A. Kois, G. Konopa, A. Smulczyk-Krawczynszyn and J. Zakrzewska-Czerwińska	247–252
Mature bovine articular cartilage contains abundant aggrecan that is C-terminally truncated at Ala ⁷¹⁹ -Ala ⁷²⁰ , a site which is readily cleaved by m-calpain <i>Published as BJ Immediate Publication 3 June 2004, DOI 10.1042/BJ20040113</i>	H. Oshita, J.D. Sandy, K. Suzuki, A. Akaike, Y. Bai, T. Sasaki and K. Shimizu	253–259
The tyrosine kinase FRK/RAK participates in cytokine-induced islet cell cytotoxicity <i>Published as BJ Immediate Publication 8 June 2004, DOI 10.1042/BJ20040285</i>	M. Welsh, C. Welsh, M. Ekman, J. Dixelius, R. Hägerkvist, C. Annerén, B. Åkerblom, S. Mahboobi, S. Chandrasekharan and E.T. Liu	261–268
Chondroitin sulphate structure affects its immunological activities on murine splenocytes sensitized with ovalbumin <i>Published as BJ Immediate Publication 17 May 2004, DOI 10.1042/BJ20031851</i>	H. Akiyama, S. Sakai, R.J. Linhardt, Y. Goda, T. Toida and T. Maitani	269–278
A core catalytic domain of the TyrA protein family: arogenate dehydrogenase from <i>Synechocystis</i> <i>Published as BJ Immediate Publication 1 June 2004, DOI 10.1042/BJ20031809</i>	C.A. Bonner, R.A. Jensen, J.E. Gander and N.O. Keyhani	279–291
Molecular modelling of the nucleotide-binding domain of Wilson's disease protein: location of the ATP-binding site, domain dynamics and potential effects of the major disease mutations <i>Published as BJ Immediate Publication 17 May 2004, DOI 10.1042/BJ20040326</i>	R.G. Efremov, Y.A. Kosinsky, D.E. Nolde, R. Tsivkovskii, A.S. Arseniev and S. Lutsenko	293–305
Metal-binding mechanism of Cox17, a copper chaperone for cytochrome c oxidase <i>Published as BJ Immediate Publication 14 May 2004, DOI 10.1042/BJ20040360</i>	P. Palumaa, L. Kangur, A. Voronova and R. Sillard	307–314
Cloning and expression of an inhibitor of microbial metalloproteinases from insects contributing to innate immunity <i>Published as BJ Immediate Publication 28 April 2004, DOI 10.1042/BJ20031923</i>	A. Clermont, M. Wedde, V. Seitz, L. Podsiadlowski, D. Lenze, M. Hummel and A. Vilcinskis	315–322
Dual regulation of AP-2 α transcriptional activation by poly(ADP-ribose) polymerase-1 <i>Published as BJ Immediate Publication 1 June 2004, DOI 10.1042/BJ20040593</i>	M. Li, P. Naidu, Y. Yu, N.A. Berger and P. Kannan	323–329
The role of the <i>LRRPRC</i> (leucine-rich pentatricopeptide repeat cassette) gene in cytochrome oxidase assembly: mutation causes lowered levels of COX (cytochrome c oxidase) I and COX III mRNA <i>Published as BJ Immediate Publication 13 May 2004, DOI 10.1042/BJ20040469</i>	F. Xu, C. Morin, G. Mitchell, C. Ackerley and B.H. Robinson	331–336
Unique functional properties of a member of the Fushi Tarazu-Factor 1 family from <i>Schistosoma mansoni</i> <i>Published as BJ Immediate Publication 23 April 2004, DOI 10.1042/BJ20040489</i>	B. Bertin, S. Sasorith, S. Caby, F. Oger, J. Cornette, J.-M. Wurtz and R.J. Pierce	337–351
Identification of the actin-binding domain of Ins(1,4,5)P ₃ 3-kinase isoform B (IP3K-B) <i>Published as BJ Immediate Publication 6 May 2004, DOI 10.1042/BJ20031751</i>	M.A. Brehm, I. Schreiber, U. Bertsch, A. Wegner and G.W. Mayr	353–362
MT1-MMP mediates MUC1 shedding independent of TACE/ADAM17 <i>Published as BJ Immediate Publication 7 May 2004, DOI 10.1042/BJ20040513</i>	A. Thathiah and D.D. Carson	363–373
Heterodimeric interaction and interfaces of S100A1 and S100P <i>Published as BJ Immediate Publication 1 June 2004, DOI 10.1042/BJ20040142</i>	G. Wang, S. Zhang, D.G. Fernig, D. Spiller, M. Martin-Fernandez, H. Zhang, Y. Ding, Z. Rao, P.S. Rudland and R. Barraclough	375–383
A co-translational model to explain the <i>in vivo</i> import of proteins into HeLa cell mitochondria <i>Published as BJ Immediate Publication 21 May 2004, DOI 10.1042/BJ20040065</i>	A. Mukhopadhyay, L. Ni and H. Weiner	385–392



Biochemical Journal

The Biochemical Society, London © 2004

Volume 382, 2004

Editorial Board

Chair

G. Banting • Bristol

Vice Chair, The Americas

G. Salvesen • La Jolla

Reviews Editor

J. D. Scott • Portland, OR

Deputy Chairs

R. A. J. Challiss • Leicester

S. Gutteridge • Newark, DE

B. Henrissat • Marseille

D. Hoekstra • Groningen

N. M. Hooper • Leeds

J. P. Kehrer • Austin

K. H. Mayo • Minneapolis

M. J. O. Wakelam • Birmingham

H. M. Wallace • Aberdeen

M. P. Walsh • Calgary

Publisher

P. J. Starley

Production Editor

M. D. Cunningham

Senior Staff Editor

S. M. Hobday

Staff Editors

L. Ball

L. Johnson

J. W. Mockridge

L. M. Petty

M. R. Thorne

Editorial Assistant

E. A. G. Elloway

Administrative Editor, US Office

S. Schendel

D. R. Alessi (Dundee)

D. Attaix (Ceyrat)

G. J. Barritt (Adelaide)

J. L. Blank (Cambridge, MA)

M. Blatt (Glasgow)

P. G. Board (Canberra)

M. Bogoy (Stanford, CA)

M. Bollen (Leuven)

B. Brüne (Kaiserslautern)

D. Carling (London)

A. Clerk (London)

G. P. Côté (Kingston, Ont.)

J. R. Couchman (London)

W. Cramer (West Lafayette)

G. J. Davies (York)

D. A. Day (Nedlands)

H. Deckmyn (Kortrijk)

C. S. Duckett (Ann Arbor)

J. M. East (Southampton)

B. Engelmann (Munich)

R. M. Epand (Hamilton, Ont.)

D. A. Fell (Oxford)

R. Ferraris (Newark, NJ)

B. Foxwell (London)

J.-M. Frère (Liège)

A. Galione (Oxford)

P. G. W. Gettins (Chicago)

D. A. F. Gillespie (Glasgow)

S. Goodbourn (London)

S. V. Graham (Glasgow)

P. A. Grimaldi (Nice)

B. Hallberg (Umeå)

P. I. Haris (Leicester)

L. Hedstrom (Waltham, MA)

F. G. Hegardt (Barcelona)

S. High (Manchester)

I. B. Holland (Orsay)

J. Hsuan (London)

W. Jessup (Sydney)

B. Kalyanaraman (Milwaukee)

M. G. Kazanietz (Philadelphia)

I. M. Kovach (Washington D.C.)

P. W. Kuchel (Sydney)

R. Leduc (Sherbrooke)

E. R. Levin (Long Beach, CA)

L. Machesky (Birmingham)

R. Marais (London)

P. Maurel (Montpellier)

M. Meisterernst (Munich)

H. Mellor (Bristol)

J. S. Mort (Montreal)

W. Müller-Esterl (Frankfurt)

M. P. Murphy (Cambridge)

L. M. Obeid (Charleston)

M. Parenti (Monza)

M. A. J. Parry (Harpending)

M. Paulsson (Cologne)

L. Persson (Lund)

A. D. Postle (Southampton)

N. J. Pyne (Glasgow)

S. Roberts (Manchester)

G. A. Rutter (Bristol)

N. J. P. Ryba (Bethesda)

J. R. Sayers (Sheffield)

S. C. Sealfon (New York)

P. R. Shepherd (Auckland)

A. Sim (Callaghan, NSW)

R. J. Simpson (Parkville)

B. F. Sloane (Detroit)

C. W. Taylor (Cambridge)

K. F. Tipton (Dublin)

M. A. Titheradge (Brighton)

A. B. Tobin (Leicester)

A. Toker (Boston)

S. A. Tooze (London)

M. Torti (Pavia)

B. Vanhaesebroeck (London)

S. G. Ward (Bath)

J. F. Woessner (Miami)

S. J. Yeaman (Newcastle upon Tyne)

J. York (Durham, NC)

S. Yoshikawa (Akoh-Hyogo)

PORTLAND PRESS Ltd

59 Portland Place
London
W1B 1QW U.K.



ISSN 0264-6021

Index of Authors

	PAGE		PAGE		PAGE		PAGE
Ackerley, C.	311	Fujio, Y.	177	Malavalli, A.	183	Sandqvist, A.	239
Akaike, A.	253	Furukawa, M.	43	Mangiola, M.	157	Sandy, J. D.	253
Åkerblom, B.	261	Gander, J. E.	279	Martín, M.	145	Sasaki, T.	253
Akiyama, H.	269	Gauster, M.	75	Martin-Fernandez, M.	375	Sasorith, S.	337
Andrews, G. K.	33	Glatter, O.	75	Mason, C. B.	51	Satake, H.	231
Annerén, C.	261	Goda, Y.	269	Matsuda, T.	177	Scaltriti, M.	157
Arseniev, A. S.	293	Goormaghtigh, E.	121	Matsushima, O.	231	Schachtrup, C.	239
Astancolle, S.	157	Greene, L. J.	191	Mayr, G. W.	353	Scheirlinckx, F.	121
Azuma, J.	177			McGivan, J. D.	27	Schreiber, I.	353
		Hägerkvist, R.	261	Miki, H.	223	Scorcioni, F.	157
Bai, Y.	253	Hamaguchi, H.	43	Minakata, H.	231	Seitz, V.	315
Barraclough, R.	375	Hinterkörner, G.	67	Mitchell, G.	311	Shimizu, K.	253
Bayne, A.-C. V.	131	Hirata, M.	177	Miyamoto, S.	223	Sillard, R.	307
Bellelli, A.	183	Hofinger, A.	67	Mockett, R. J.	131	Smulczyk-Krawczynszyn, A.	247
Bergans, N.	137	Honma, K.-i.	43	Moore, T. S.	51	Sohal, R. S.	131
Berger, N. A.	323	Honma, S.	43	Morin, C.	311	Spener, F.	239
Bertin, B.	337	Horibe, T.	169	Moroney, J. V.	51	Spiller, D.	375
Bertsch, U.	353	Huang, S.-M.	111	Mucha, J.	67	Stewart, A. J.	59
Bettuzzi, S.	157	Hummel, M.	315	Mukhopadhyay, A.	385	Suzuki, K.	253
Bleck, B.	239	Hunt, A. N.	83	Muraoka, S.	177	Suzuki, M.	205
Bonner, C. A.	279			Murayama, E.	205		
Brehm, M. A.	353	Innerlohinger, J.	75			Takahashi, K.	177
Brunori, M.	183	Inoue, H.	205	Nagai, R.	43	Takatani, T.	177
Bungard, C. I.	27	Ito, T.	177	Nagasawa, H.	205	Takeda, N.	43
Bun-Ya, M.	93			Naidu, P.	323	Takenaka, K.	223
		Jansen, J. M.	199	Nakagawa, H.	223	Takeuchi, H.	93
Caby, S.	337	Jenkins, J. R.	93	Ni, L.	385	Thathiah, A.	363
Caccamo, A. E.	157	Jensen, R. A.	279	Nishida, A.	169	Tobin, A. B.	101
Canova, S.	199	Jiang, H.	33	Nixon, P. F.	215	Tohse, H.	205
Caporali, A.	157	Jones, M.	215	Nolde, D. E.	293	Toida, T.	269
Carson, D. D.	363	Kanda, A.	231	Noshiro, M.	43	Tsivkovskii, R.	293
Casano, L. M.	145	Kangur, L.	307			Turner, P. C.	93
Cerione, R. A.	199	Kannan, P.	323	Oger, F.	337		
Chandrasekharan, S.	261	Kato, Y.	43	Ohara, N.	169	Vandegriff, K. D.	183
Chen, J.-H.	93	Kawada, T.	231	Orr, W. C.	131	Van Schaftingen, E.	137
Cheng, Y.-S.	111	Kawamoto, T.	43	Oshita, H.	253	Vanstapel, F.	137
Childress, C.	199	Keyhani, N. O.	279	Oskolkova, O. V.	75	Vertommen, D.	137
Chioato, L.	191	Kikuchi, M.	169	Ozaki, N.	205	Vial, C.	101
Clermont, A.	315	Kimura, T.	169			Vilcinskis, A.	315
Collard, F.	137	Knipping, G.	75	Palumaa, P.	307	Voronova, A.	307
Cornette, J.	337	Kogure, T.	205	Paschinger, K.	67		
		Kohler, J. A.	83	Pierce, R. J.	337	Wang, G.	375
Daly, R. J.	13	Kois, A.	247	Podsiadlowski, L.	315	Ward, R. J.	191
D'Arca, D.	157	Konopa, G.	247	Pollock, S. V.	51	Wedde, M.	315
Delpierre, G.	137	Kosinsky, Y. A.	293	Postle, A. D.	83	Wegner, A.	353
de Oliveira, A. H. C.	191	Kosma, P.	67			Weiner, H.	385
Ding, Y.	375	Kurihara, H.	43	Rao, Z.	375	Welsh, C.	261
Dixelius, J.	261			Raussens, V.	121	Welsh, M.	261
Domlatil, J.	67	Lascano, H. R.	145	Rebrin, I.	131	Wiame, E.	137
Downes, C. P.	1	Lavezzi, T.	51	Rees, H. H.	93	Wilson, I. B. H.	67
		Lenze, D.	315	Rendíć, D.	67	Winslow, R. M.	183
Efremov, R. G.	293	Leslie, N. R.	1	Roberts, S. J.	59	Winzor, D. J.	215
Ekman, M.	261	Li, M.	323	Robinson, B. H.	311	Wurtz, J.-M.	337
Emmler, T.	239	Lillycrop, K. A.	83	Rodway, H. A.	83		
Evans, R. J.	101	Lin, Q.	199	Rosa, J. C.	191	Xu, F.	311
		Linhardt, R. J.	269	Rudland, P. S.	375		
Farquharson, C.	59	Liu, E. T.	261	Ruller, R.	191	Yamagishi, D.	169
Fernig, D. G.	375	Lochnit, G.	67	Ruysschaert, J.-M.	121	Yang, Wannian	199
Ferreira, T. L.	191	Lutsenko, S.	293			Yang, Wenyu	51
Fortpied, J.	137			Sá, J. M.	191	Yu, Y.	323
Frank, S.	75	Maemura, K.	43	Sabater, B.	145	Zakrzewska-Czerwińska, J.	247
Fu, K.	33	Mahboobi, S.	261	Sadler, P. J.	59	Zawilak, A.	247
Fujimoto, K.	43	Maitani, T.	269	Sakai, S.	269	Zhang, H.	375
				Samaja, M.	183	Zhang, S.	375