

Biochemical Journal

The Biochemical Society, London © 2004

Volume 381, part 1

1 July 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. 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. 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)

A. R. Levin (Long Beach, CA)

R. Liddington (La Jolla)

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. M. Schwartz (Seattle)

S. C. Sealfon (New York)

P. R. Shepherd (London)

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:** Schematic view of the three-dimensional structure of the final model for ph-SBP (sugar-binding protein from *Pyrococcus horikoshii*). Secondary structure elements (red cylinders : helices; yellow arrows : sheets) were identified by DSSP analysis. For further information, see Marabotti et al. (2004) *Biochem. J.* **380**, 677–684.

● **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). 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).

Review**Charting gene regulatory networks: strategies, challenges and perspectives**

Published as BJ Immediate Publication 13 April 2004,
DOI 10.1042/BJ20040311

G.-H. Wei, D.-P. Liu and C.-C. Liang

1–12

Accelerated Publications

TIRF imaging of docking and fusion of single insulin granule motion in primary rat pancreatic β -cells: different behaviour of granule motion between normal and Goto-Kakizaki diabetic rat β -cells

Published as BJ Immediate Publication 6 May 2004,
DOI 10.1042/BJ20040434

M. Ohara-Imaizumi, C. Nishiwaki, T. Kikuta, S. Nagai, Y. Nakamichi and S. Nagamatsu



13–18

A novel role of Mgm1p, a dynamin-related GTPase, in ATP synthase assembly and cristae formation/maintenance

Published as BJ Immediate Publication 5 May 2004,
DOI 10.1042/BJ20040566

B. Amutha, D.M. Gordon, Y. Gu and D. Pain

19–23

Research Papers

Molecular evolution and structure–function relationships of crotoxin-like and asparagine-6-containing phospholipases A₂ in pit viper venoms

Published as BJ Immediate Publication 22 March 2004,
DOI 10.1042/BJ20040125

Y.-H. Chen, Y.-M. Wang, M.-J. Hseu and I.-H. Tsai

25–34

Identification of a dehydrogenase acting on D-2-hydroxyglutarate

Published as BJ Immediate Publication 7 April 2004,
DOI 10.1042/BJ20031933

Y. Achouri, G. Noël, D. Vertommen, M.H. Rider, M. Veiga-Da-Cunha and E. van Schaftingen

35–42

Signalling of the M₃-muscarinic receptor to the anti-apoptotic pathway

Published as BJ Immediate Publication 7 April 2004,
DOI 10.1042/BJ20031705

D.C. Budd, E.J. Spragg, K. Ridd and A.B. Tobin

43–49

Effect of thyroid hormone binding proteins on insulin receptor binding of B1-thyronine-insulin analogues

Published as BJ Immediate Publication 15 March 2004,
DOI 10.1042/BJ20040177

F. Shojaee-Moradie, M.P.Y. Chan, M.A. Telfer, D. Brandenburg, E. Sundermann, H. Eckey, J. Kleinjung, A. Schüttler and R.H. Jones

51–57

Regulation of cytosolic prostaglandin E synthase by phosphorylation

Published as BJ Immediate Publication 25 March 2004,
DOI 10.1042/BJ20040118

T. Kobayashi, Y. Nakatani, T. Tanioka, M. Tsujimoto, S. Nakajo, K. Nakaya, M. Murakami and I. Kudo



59–69

Substrate-specifying determinants of the nucleotide pyrophosphatases/phosphodiesterases NPP1 and NPP2

Published as BJ Immediate Publication 20 April 2004,
DOI 10.1042/BJ20040465

A. Cimpean, C. Stefan, R. Gijsbers, W. Stalmans and M. Bollen

71–77

A new class (penaeidin class 4) of antimicrobial peptides from the Atlantic white shrimp (*Litopenaeus setiferus*) exhibits target specificity and an independent proline-rich-domain function

Published as BJ Immediate Publication 14 April 2004,
DOI 10.1042/BJ20040330

B.J. Cuthbertson, E.E. Büllesbach, J. Fievet, E. Bachère and P.S. Gross

79–86

Thimerosal stimulates Ca ²⁺ flux through inositol 1,4,5-trisphosphate receptor type 1, but not type 3, via modulation of an isoform-specific Ca ²⁺ -dependent intramolecular interaction <i>Published as BJ Immediate Publication 11 March 2004, DOI 10.1042/BJ20040072</i>	G. Bultynck, K. Szlufcik, N.N. Kasri, Z. Assefa, G. Callewaert, L. Missiaen, J.B. Parys and H. De Smedt	87–96
Conformational stability and domain coupling in D-glucose/D-galactose-binding protein from <i>Escherichia coli</i> <i>Published as BJ Immediate Publication 22 March 2004, DOI 10.1042/BJ20040232</i>	G. Piszczek, S. D'Auria, M. Staiano, M. Rossi and A. Ginsburg	97–103
Characterization of the ATP-hydrolysing activity of α -sarcoglycan <i>Published as BJ Immediate Publication 19 March 2004, DOI 10.1042/BJ20031644</i>	D. Sandonà, S. Gastaldello, T. Martinello and R. Betto	105–112
Murine cystathionine γ -lyase: complete cDNA and genomic sequences, promoter activity, tissue distribution and developmental expression <i>Published as BJ Immediate Publication 23 March 2004, DOI 10.1042/BJ20040243</i>	I. Ishii, N. Akahoshi, X.-N. Yu, Y. Kobayashi, K. Namekata, G. Komaki and H. Kimura	113–123
Evidence for 'lock and key' character in an anti-phosphonate hydrolytic antibody catalytic site augmented by non-reaction centre recognition: variation in substrate selectivity between an anti-phosphonate antibody, an anti-phosphate antibody and two hydrolytic enzymes <i>Published as BJ Immediate Publication 31 March 2004, DOI 10.1042/BJ20031966</i>	S. Sonkaria, G. Boucher, J. Flórez-Álvarez, B. Said, S. Hussain, E.L. Ostler, S. Gul, E.W. Thomas, M. Resmini, G. Gallacher and K. Brocklehurst	125–130
Biosynthesis of UDP-GlcA, a key metabolite for capsular polysaccharide synthesis in the pathogenic fungus <i>Cryptococcus neoformans</i> <i>Published as BJ Immediate Publication 19 March 2004, DOI 10.1042/BJ20031075</i>	M. Bar-Peled, C.L. Griffith, J.J. Ory and T.L. Doering	131–136
The sulphur oxygenase reductase from <i>Acidianus ambivalens</i> is a multimeric protein containing a low-potential mononuclear non-haem iron centre <i>Published as BJ Immediate Publication 19 March 2004, DOI 10.1042/BJ20040003</i>	T. Urich, T.M. Bandejas, S.S. Leal, R. Rachel, T. Albrecht, P. Zimmermann, C. Scholz, M. Teixeira, C.M. Gomes and A. Kletzin	137–146
Channelling of substrate promiscuity of the skeletal-muscle ADP-ribosyl cyclase isoform <i>Published as BJ Immediate Publication 15 April 2004, DOI 10.1042/BJ20031977</i>	I. Bacher, A. Zidar, M. Kratzel and M. Hohenegger	147–154
Biochemical analysis of the processive mechanism for epimerization of alginate by mannuronan C-5 epimerase AlgE4 <i>Published as BJ Immediate Publication 19 March 2004, DOI 10.1042/BJ20031265</i>	C. Campa, S. Holtan, N. Nilsen, T.M. Bjerkan, B.T. Stokke and G. Skjåk-Bræk	155–164
Binding of the DNA-dependent protein kinase catalytic subunit to Holliday junctions <i>Published as BJ Immediate Publication 22 March 2004, DOI 10.1042/BJ20031666</i>	R. Dip and H. Naegeli	165–174
Hypochlorite and superoxide radicals can act synergistically to induce fragmentation of hyaluronan and chondroitin sulphates <i>Published as BJ Immediate Publication 13 April 2004, DOI 10.1042/BJ20040148</i>	M.D. Rees, C.L. Hawkins and M.J. Davies	175–184
Functional and biochemical characterization of a recombinant <i>Arabidopsis thaliana</i> 3-deoxy-D-manno-octulosonate 8-phosphate synthase <i>Published as BJ Immediate Publication 7 April 2004, DOI 10.1042/BJ20040207</i>	J. Wu, M.A. Patel, A.K. Sundaram and R.W. Woodard	185–193
<i>SUT1</i> -promoted sterol uptake involves the ABC transporter Aus1 and the mannoprotein Dan1 whose synergistic action is sufficient for this process <i>Published as BJ Immediate Publication 22 March 2004, DOI 10.1042/BJ20040297</i>	P. Alimardani, M. Régnacq, C. Moreau-Vauzelle, T. Ferreira, T. Rossignol, B. Blondin and T. Bergès	195–202

- The mosaic receptor sorLA/LR11 binds components of the plasminogen-activating system and platelet-derived growth factor-BB similarly to LRP1 (low-density lipoprotein receptor-related protein), but mediates slow internalization of bound ligand
Published as BJ Immediate Publication 30 March 2004, DOI 10.1042/BJ20040149
- Heterotypic interactions among NACHT domains: implications for regulation of innate immune responses
Published as BJ Immediate Publication 26 April 2004, DOI 10.1042/BJ20031506
- Conformational variation between allelic variants of cell-surface ovine prion protein
Published as BJ Immediate Publication 7 April 2004, DOI 10.1042/BJ20040351
- Angiotensin II-induced ERK1/ERK2 activation and protein synthesis are redox-dependent in glomerular mesangial cells
Published as BJ Immediate Publication 18 March 2004, DOI 10.1042/BJ20031614
- Requirements for superoxide-dependent tyrosine hydroperoxide formation in peptides
Published as BJ Immediate Publication 16 March 2004, DOI 10.1042/BJ20040259
- Reversion of protein aggregation mediated by Sso7d in cell extracts of *Sulfolobus solfataricus*
Published as BJ Immediate Publication 16 March 2004, DOI 10.1042/BJ20040131
- The ErbB2/Neu/HER2 receptor is a new calmodulin-binding protein
Published as BJ Immediate Publication 14 April 2004, DOI 10.1042/BJ20040515
- Regulation of the human involucrin gene promoter by co-activator proteins
Published as BJ Immediate Publication 16 March 2004, DOI 10.1042/BJ20031653
- Participation of the proteasomal lid subunit Rpn11 in mitochondrial morphology and function is mapped to a distinct C-terminal domain
Published as BJ Immediate Publication 12 March 2004, DOI 10.1042/BJ20040008
- Dynamic profiling of the glucose metabolic network in fasted rat hepatocytes using [1,2-¹³C₂]glucose
Published as BJ Immediate Publication 22 March 2004, DOI 10.1042/BJ20031737
- Enzymic and structural characterization of nepenthesin, a unique member of a novel subfamily of aspartic proteinases
Published as BJ Immediate Publication 23 March 2004, DOI 10.1042/BJ20031575
- Cyan-emitting and orange-emitting fluorescent proteins as a donor/acceptor pair for fluorescence resonance energy transfer
Published as BJ Immediate Publication 5 April 2004, DOI 10.1042/BJ20040321
- Transglutaminase 5 is regulated by guanine-adenine nucleotides
Published as BJ Immediate Publication 23 March 2004, DOI 10.1042/BJ20031474
- SL11 (YGR212W)* is a major gene conferring resistance to the sphingolipid biosynthesis inhibitor ISP-1, and encodes an ISP-1 N-acetyltransferase in yeast
Published as BJ Immediate Publication 16 March 2004, DOI 10.1042/BJ20040108
- J. Gliemann, G. Hermey, A. Nykjær, C.M. Petersen, C. Jacobsen and P.A. Andreasen **203–212**
- J.S. Damiano, V. Oliveira, K. Welsh and J.C. Reed **213–219**
- A.M. Thackray, S. Yang, E. Wong, T.J. Fitzmaurice, R.J. Morgan-Warren and R. Bujdoso **221–229**
- Y. Gorin, J.M. Ricono, B. Wagner, N.-H. Kim, B. Bhandari, G.G. Choudhury and H.E. Abboud **231–239**
- C.C. Winterbourn, H.N. Parsons-Mair, S. Gebicki, J.M. Gebicki and M.J. Davies **241–248**
- A. Guagliardi, L. Mancusi and M. Rossi **249–255**
- H. Li, J. Sánchez-Torres, A. del Carpio, V. Salas and A. Villalobo **257–266**
- N.Q. Tran and D.L. Crowe **267–273**
- T. Rinaldi, E. Pick, A. Gambadoro, S. Zilli, V. Maytal-Kivity, L. Frontali and M.H. Glickman **275–285**
- S. Marin, W.-N.P. Lee, S. Bassilian, S. Lim, L.G. Boros, J.J. Centelles, J.M. Fernández-Novell, J.J. Guinovart and M. Cascante **287–294**
- S.B.P. Athauda, K. Matsumoto, S. Rajapakshe, M. Kuribayashi, M. Kojima, N. Kubomura-Yoshida, A. Iwamatsu, C. Shibata, H. Inoue and K. Takahashi **295–306**
- S. Karasawa, T. Araki, T. Nagai, H. Mizuno and A. Miyawaki **307–312**
- E. Candi, A. Paradisi, A. Terrinoni, V. Pietroni, S. Oddi, B. Cadot, V. Jogini, M. Meiyappan, J. Clardy, A. Finazzi-Agro and G. Melino **313–319**
- M. Momoi, D. Tanoue, Y. Sun, H. Takematsu, Y. Suzuki, M. Suzuki, A. Suzuki, T. Fujita and Y. Kozutsumi **321–328**

Biochemical Journal

The Biochemical Society, London © 2004

Volume 381, 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)

A. R. Levin (Long Beach, CA)

R. Liddington (La Jolla)

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. M. Schwartz (Seattle)

S. C. Sealfon (New York)

P. R. Shepherd (London)

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
Abboud, H. E.	231	Flórez-Álvarez, J.	125	Mancusi, L.	249	Sánchez-Torres, J.	257
Achouri, Y.	35	Frontali, L.	275	Marin, S.	287	Sandonà, D.	105
Akahoshi, N.	113	Fujita, T.	321	Martinello, T.	105	Scholz, C.	137
Albrecht, T.	137	Gallacher, G.	125	Matsumoto, K.	295	Schüttler, A.	51
Alimardani, P.	195	Gambadoro, A.	275	Maytal-Kivity, V.	275	Shibata, C.	295
Amutha, B.	19	Gastaldello, S.	105	Meiyappan, M.	313	Shojaee-Moradie, F.	51
Andreasen, P. A.	203	Gebicki, J. M.	241	Melino, G.	313	Skjåk-Bræk, G.	155
Araki, T.	307	Gebicki, S.	241	Missiaen, L.	87	Sonkaria, S.	125
Assefa, Z.	87	Gijsbers, R.	71	Miyawaki, A.	307	Spragg, E. J.	43
Athauda, S. B. P.	295	Ginsburg, A.	97	Mizuno, H.	307	Staiano, M.	97
Bacher, I.	147	Glickman, M. H.	275	Momoi, M.	321	Stalmans, W.	71
Bachère, E.	79	Gliemann, J.	203	Moreau-Vauzelle, C.	195	Stefan, C.	71
Bandeiras, T. M.	137	Gomes, C. M.	137	Morgan-Warren, R. J.	221	Stokke, B. T.	155
Bar-Peled, M.	131	Gordon, D. M.	19	Murakami, M.	59	Sun, Y.	321
Bassilian, S.	287	Gorin, Y.	231	Naegeli, H.	165	Sundaram, A. K.	185
Bergès, T.	195	Griffith, C. L.	131	Nagai, S.	13	Sundermann, E.	51
Betto, R.	105	Gross, P. S.	79	Nagai, T.	307	Suzuki, A.	321
Bhandari, B.	231	Gu, Y.	19	Nagamatsu, S.	13	Suzuki, M.	321
Bjerkkan, T. M.	155	Guagliardi, A.	249	Nakajo, S.	59	Suzuki, Y.	321
Blondin, B.	195	Guinovart, J. J.	287	Nakamichi, Y.	13	Szlufcik, K.	87
Bollen, M.	71	Gul, S.	125	Nakatani, Y.	59	Takahashi, K.	295
Boros, L. G.	287	Hawkins, C. L.	175	Nakaya, K.	59	Takematsu, H.	321
Boucher, G.	125	Hermey, G.	203	Namekata, K.	113	Tanioka, T.	59
Brandenburg, D.	51	Hohenegger, M.	147	Nilsen, N.	155	Tanoue, D.	321
Brocklehurst, K.	125	Holtan, S.	155	Nishiwaki, C.	13	Teixeira, M.	137
Budd, D. C.	43	Hseu, M.-J.	25	Noël, G.	35	Telfer, M. A.	51
Bujdoso, R.	221	Hussain, S.	125	Nykjær, A.	203	Terrinoni, A.	313
Büllesbach, E. E.	79	Inoue, H.	295	Oddi, S.	313	Thackray, A. M.	221
Bultynck, G.	87	Ishii, I.	113	Ohara-Imaizumi, M.	13	Thomas, E. W.	125
Cadot, B.	313	Iwamatsu, A.	295	Oliveira, V.	213	Tobin, A. B.	43
Callewaert, G.	87	Jacobsen, C.	203	Ory, J. J.	131	Tran, N. Q.	267
Campa, C.	155	Jogini, V.	313	Ostler, E. L.	125	Tsai, I.-H.	25
Candi, E.	313	Jones, R. H.	51	Pain, D.	19	Tsujimoto, M.	59
Cascante, M.	287	Karasawa, S.	307	Paradisi, A.	313	Urich, T.	137
Centelles, J. J.	287	Kasri, N. N.	87	Parsons-Mair, H. N.	241	van Schaftingen, E.	35
Chan, M. P. Y.	51	Kikuta, T.	13	Parys, J. B.	87	Veiga-Da-Cunha, M.	35
Chen, Y.-H.	25	Kim, N.-H.	231	Patel, M. A.	185	Vertommen, D.	35
Choudhury, G. G.	231	Kimura, H.	113	Petersen, C. M.	203	Villalobo, A.	257
Cimpean, A.	71	Kleijung, J.	51	Pick, E.	275	Wagner, B.	231
Clardy, J.	313	Kletzin, A.	137	Pietroni, V.	313	Wang, Y.-M.	25
Crowe, D. L.	267	Kobayashi, T.	59	Piszczek, G.	97	Wei, G.-H.	1
Cuthbertson, B. J.	79	Kobayashi, Y.	113	Rachel, R.	137	Welsh, K.	213
Damiano, J. S.	213	Kojima, M.	295	Rajapakshe, S.	295	Winterbourn, C. C.	241
D'Auria, S.	97	Komaki, G.	113	Reed, J. C.	213	Wong, E.	221
Davies, M. J.	175, 241	Kozutsumi, Y.	321	Rees, M. D.	175	Woodard, R. W.	185
del Carpio, A.	257	Kratzel, M.	147	Régnacq, M.	195	Wu, J.	185
De Smedt, H.	87	Kubomura-Yoshida, N.	295	Resmini, M.	125	Yang, S.	221
Dip, R.	165	Kudo, I.	59	Ricono, J. M.	231	Yu, X.-N.	113
Doering, T. L.	131	Kuribayashi, M.	295	Ridd, K.	43	Zidar, A.	147
Eckey, H.	51	Leal, S. S.	137	Rider, M. H.	35	Zilli, S.	275
Fernández-Novell, J. M.	287	Lee, W.-N. P.	287	Rinaldi, T.	275	Zimmermann, P.	137
Ferreira, T.	195	Li, H.	257	Rossi, M.	97, 249		
Fievet, J.	79	Liang, C.-C.	1	Rosignol, T.	195		
Finazzi-Agro, A.	313	Lim, S.	287	Said, B.	125		
Fitzmaurice, T. J.	221	Liu, D.-P.	1	Salas, V.	257		