Journal compilation © 2011 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).


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 0264-6021/2011/$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, N.J., 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: M. Sharon 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 Beakes, Newcastle University.
Instructions to Authors

- **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 by experimental, 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 the paper is accepted for publication the authors will transfer to the Biochemical Society the copyright in the paper, which will then 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, whether its scientific merit be accepted or not, is acceptable 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 new information or presenting novel 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 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.

- **Procedure for submission** These instructions represent current 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.

- **Numerical systems 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 Charles Hendel, BD USA, the Sanford-Burnham Institute for Medical Research, 10901 N. Torrey Pines Road, La Jolla, CA 92037, U.S.A. (telephone +1 858 795 5263; fax +1 858 795 5264; email editorial@biochemjusa.org). Authors in China should contact: Dr Lin Huo, Institute of Biophysics, Chinese Academy of Sciences, Room 5202, 15 Datun Road, Chaoyang District, Beijing 100101 (telephone +86 10 64885873; email editorial@biochem.cn).

- **Colour figures** Colour figures are published free of charge provided that the corresponding space on the published paper has been a Full or Early Career 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 movies and PNG 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, CABBASE, 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 price at a reduced rate (see www.portlandpress.com for further detail). Terms are cash on order (US$ in N. America, £ sterling for the 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.

- **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 marketing@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).