

Journal of Cellular Biochemistry

EXECUTIVE EDITORS

In the United States: **C. Fred Fox** • Department of Microbiology and Molecular Genetics, University of California, Los Angeles, CA 90024-1489
Gary S. Stein • Department of Cell Biology, University of Massachusetts Medical Center, 55 Lake Avenue North,
Worcester, MA 01655

In Europe: **Max M. Burger** • Friedrich-Miescher Institut, Postfach 2543, CH-4002 Basel, Switzerland

FIELD EDITORS

Garth L. Nicolson • Department of Tumor Biology (108), MD Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, TX 77030

W. Jackson Pledger • H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL 33612-9497

James Watson • Department of Pathology, University of Auckland School of Medicine, Auckland, New Zealand

EDITORIAL BOARD

Jorge E. Allende
Santiago, Chile

Richard G.W. Anderson
Dallas, TX

Jane Aubin
Toronto, Canada

Yves-Alain Barde
Martinsried, Germany

J. Bar-Tana
Jerusalem, Israel

Avri Ben-Ze'ev
Rehovot, Israel

Ronald Berezney
Buffalo, NY

Jaswant Bhorjee
Bethesda, MD

Mina J. Bissell
Berkeley, CA

E. Morton Bradbury
Davis, CA

Rodrigo Bravo
Princeton, NJ

Edward Bresnick
Worcester, MA

Ralph Buttyan
New York, NY

Judith Campisi
Berkeley, CA

Kermit L. Carraway
Miami, FL

Moses V. Chao
New York, NY

Richard A. Clark
Stony Brook, NY

David R. Clemmons
Chapel Hill, NC

Carl M. Cohen
Boston, MA

Carlo M. Croce
Philadelphia, PA

Dennis D. Cunningham
Irvine, CA

Michael P. Czech
Worcester, MA

James R. Davie
Winnipeg, Canada

Benoit De Crombrughe
Houston, TX

Pierre De Meyts
Gentofte, Denmark

David Denhardt
Piscataway, NJ

Edward A. Dennis
La Jolla, CA

Edward M. De Robertis
Los Angeles, CA

Rik Derynck
San Francisco, CA

William N. Drohan
Rockville, MD

John Eisman
Sydney, Australia

John H. Elder
La Jolla, CA

Marilynn E. Etzler
Davis, CA

Charles H. Evans
Bethesda, MD

Gerald D. Fasman
Waltham, MA

Ten Feizi
Middlesex, England

Carl M. Feldherr
Gainesville, FL

John H. Fessler
Los Angeles, CA

Richard Firtel
La Jolla, CA

Donald A. Fischman
New York, NY

Benjamin Geiger
Rehovot, Israel

Ian Gibbons
Honolulu, HI

Antonio Giordano
Philadelphia, PA

David W. Golde
New York, NY

Ira D. Goldfine
San Francisco, CA

Eugene Goldwasser
Chicago, IL

William Greenlee
Worcester, MA

Curtis C. Harris
Bethesda, MD

Mary E. Hatten
New York, NY

Mark R. Haussler
Tucson, AZ

Norman B. Hecht
Medford, MA

Brian Herman
Chapel Hill, NC

Harvey Herschman
Los Angeles, CA

Scott Hiebert
Memphis, TN

Richard A. Houghten
San Diego, CA

Tony Hunter
San Diego, CA

Maria Imschenetsky
Concepcion, Chile

Samson T. Jacob
North Chicago, IL

Gary R. Jacobson
Boston, MA

Gary L. Johnson
Denver, CO

Peter Jones
Los Angeles, CA

Michael Klagsbrun
Boston, MA

Barry Komm
Radnor, PA

Barbara Kream
Farmington, CT

Jeanne Lawrence
Worcester, MA

Yvonne Lefebvre
Ottawa, Ontario, Canada

Jane B. Lian
Worcester, MA

Marc E. Lippman
Washington, DC

Elizabeth J. Luna
Shrewsbury, MA

Bruce E. Magun
Portland, OR

Denis Monard
Basel, Switzerland

Harold L. Moses
Nashville, TN

Marit Nilsen-Hamilton
Ames, IA

Masaki Noda
Tokyo, Japan

Anthony W. Norman
Riverside, CA

Ellis Neufeld
Boston, MA

Dale L. Oxender
Ann Arbor, MI

Richard G. Painter
Tyler, TX

Sheldon Penman
Cambridge, MA

Paul F. Pilch
Boston, MA

Archie W. Prestayko
Rosemont, IL

Peter Quesenberry
Worcester, MA

E. Premkumar Reddy
Philadelphia, PA

Phillips W. Robbins
Cambridge, MA

Gideon A. Rodan
West Point, PA

Alonzo H. Ross
Shrewsbury, MA

Russell Ross
Seattle, WA

Giovanni Rovera
Philadelphia, PA

E. Helene Sage
Seattle, WA

Milton H. Saier
La Jolla, CA

Alan R. Saltiel
Ann Arbor, MI

Martin E. Schwab
Zürich, Switzerland

Eric M. Shooter
Stanford, CA

Justin Silver
Jerusalem, Israel

Robert H. Singer
Worcester, MA

Gail E. Sonenshein
Boston, MA

Kenneth Soprano
Philadelphia, PA

Thomas C. Spelsberg
Rochester, MN

Eric J. Stanbridge
Irvine, CA

E. Richard Stanley
Bronx, NY

Janet L. Stein
Worcester, MA

Donald F. Steiner
Chicago, IL

F. Marc Stewart
Worcester, MA

Charles D. Stiles
Boston, MA

Tatsuo Suda
Tokyo, Japan

Marvin L. Tanzer
Farmington, CT

Steven L. Teitelbaum
St. Louis, MO

Jean Paul Thiery
Paris, France

George Todaro
Seattle, WA

Milan R. Uskoković
Nutley, NJ

R. Van Driel
Amsterdam, The Netherlands

André J. van Wijnen
Worcester, MA

Klaus von der Mark
Erlangen, Germany

D. Martin Watterson
Nashville, TN

Noel Weidner
San Francisco, CA

Sherman Weissman
New Haven, CT

Karel W.A. Wirtz
Utrecht, Netherlands

Gerard Zambetti
Memphis, TN

© 1996 Wiley-Liss, Inc. All rights reserved. No part of this publication may be reproduced in any form or by any means, except as permitted under section 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the publisher, or authorization through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (508) 750-8400, fax (508) 750-4470. Requests to the publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc.

Journal of Cellular Biochemistry (ISSN 0730-2312) is published 16 times a year, monthly except for twice in the months of March, June, September, and December, by Wiley-Liss, Inc., a division of John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158-0012. **Send subscription inquiries to:** John Wiley & Sons, Inc., Subscription Department, 9th Floor, 605 Third Avenue, New York, NY 10158-0012, (212) 850-8832. **Advertising Inquiries** should be addressed to Roberta Frederick, Advertising Sales Manager, Wiley-Liss, Inc., 605 Third Avenue, New York, NY 10158-0012, (212) 850-8832. **Offprint Sales and Inquiries** should be directed to the Customer Service Department, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158-0012, (212) 850-8776. **Subscription Price:** Volumes 60, 61, 62, and 63 (16 issues) plus Supplements 24, 25, and 26, 1996: \$2,185 in U.S.; \$2,375 in Canada and Mexico; \$2,479 outside North America. **Special Personal Subscription Rate:** 1996: \$195 within North America; \$241 outside North America. (Individual price does not include Supplements.) All subscriptions outside the U.S. will be sent by air. Payment must be made in US dollars drawn on a US bank. **Change of Address:** Please forward to the subscriptions address listed above six weeks prior to move; enclose present mailing label with change of address. **Claims for Missing Issues:** Claims for undelivered copies will be accepted only after the following issue has been received. Please enclose a copy of the mailing label or cite your subscriber reference number in order to expedite handling. Missing copies will be supplied when losses have been sustained in transit and where reserve stock permits. Send claims to John Wiley & Sons, Inc., Customer Service, 605 Third Avenue, New York, NY 10158. If claims are not resolved satisfactorily, please write to Susan Malawski, Director, Subscriptions Fulfillment and Sales, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158. **Cancellations:** Subscription cancellations will not be accepted after the first issue has been mailed. **Postmaster:** Send address changes to **Journal of Cellular Biochemistry**, Susan Heaney, Subscription Systems and Distribution, John Wiley & Sons, Inc., 605 Third Avenue, New York, NY 10158. **Indexed by:** Current Contents/Life Sciences • Science Citation Index • Scisearch • Chemical Abstracts • Index Medicus • BIOSIS Data Base • Excerpta Medica • Information Retrieval, Ltd. • Cambridge Scientific Abstracts • Institute for Scientific Information-Soviet Union • Current Opinion in Orthopedics • Current Opinion in Pediatrics • Current Opinion in Cell Biology • Current Opinion in Rheumatology • Reference Update. Printed in the United States of America. Copyright © 1996 Wiley-Liss, Inc.

This journal is printed on acid-free paper.

SCOPE

The **Journal of Cellular Biochemistry** publishes descriptions of original research in which complex cellular, pathologic, clinical, or animal model systems are studied by molecular biological, biochemical, quantitative ultrastructural or immunological approaches. The areas covered include conditions, agents, regulatory processes, or differentiation states that influence structure, structure-function relationships, or assembly mechanisms in cells, viruses, or supramolecular constructs. This scope extends to cell structure and function; organelle assembly; regulation of cell organization, reproduction or differentiation; and to the development, organization or remodeling of tissues. Manuscripts should be submitted to an **Executive or Field Editor**.

Executive Editors:

C. Fred Fox

Department of Microbiology and
Molecular Genetics
University of California
Los Angeles, CA 90095-1489
Telephone: (310) 825-9329
TeleFax: (310) 206-1703

Editorial Assistant: Gail A. Panatier

Gary S. Stein

Department of Cell Biology
University of Massachusetts
Medical Center
55 Lake Avenue North
Worcester, MA 01655
Telephone: (508) 856-5625
TeleFax: (508) 856-6800

Editorial Assistant: Betsy Bronstein

Max M. Burger

Friedrich-Miescher Institut
Postfach 2543
CH-4002 Basel
Switzerland
Telephone: (061) 697-68-50
TeleFax: (061) 697-67-83

Editorial Assistant: Gaby Schäfer

Field Editors:

Garth L. Nicolson

Department of Tumor Biology (108)
MD Anderson Cancer Center
1515 Holcombe Boulevard
Houston, TX 77030
Telephone: (713) 792-7481
TeleFax: (713) 794-0209

W. Jackson Pledger

H. Lee Moffitt Cancer Center
and Research Institute
12902 Magnolia Drive
Tampa, FL 33612-9497
Telephone: (813) 979-7265

James Watson

Department of Pathology
University of Auckland
School of Medicine
Auckland, New Zealand
Telephone: 0064 09 379-717
TeleFax: 0064 09 735-215

CATEGORIES OF MANUSCRIPTS CONSIDERED FOR PUBLICATION

Articles are full-length papers presenting complete descriptions of original research which have not been published and are not being considered for publication elsewhere.

Prospects are topical overviews on emerging areas of research. They summarize key problems, concepts, experimental approaches, and research opportunities which characterize a subject area. Prospects should not include previously unpublished research results. They are generally invited by the Editors; authors who wish to submit a Prospect should first consult with the Editors.

Viewpoints include news items, meeting summaries and announcements, book reviews and letters to the Editor. Submitted Viewpoints will be reviewed rapidly and appear in the next printed issue of the Journal.

INSTRUCTIONS FOR ARTICLE PREPARATION

The **Journal** publishes Articles, Prospects, and Viewpoints. Three copies of all submitted materials are required. The manuscript must be typed, double-spaced, on one side of white bond paper.

Sections: Original Research Articles should be organized in the sequence: Abstract, Introductory Statement (without heading), Methods, Results, Discussion, Acknowledgments, References, Tables, Legends, and Figures.

Illustrations: Authors should submit 3 high quality prints of all halftone figures, e.g., micrographs, acrylamide gels, etc. For electron micrographs, indicate on overlay sheets the details that are of particular importance. The page space available for illustrations is up to 3 × 9 inches for 1-column illustrations and up to 6 $\frac{5}{16}$ × 9 inches for 2-column illustrations. Figures and tables must fit these proportions, and lettering size should also allow for this reduction. Submit all figures and tables on separate sheets. Drawings should be carefully prepared in black ink; glossy photographs are acceptable. Color is printed in the *Journal* only at author's expense. Please inquire prior to submitting color illustrations. The publisher will provide cost estimates prior to printing.

Symbols and abbreviations: Unless common, these should be defined when first used, and not included in the abstract. Nomenclature, symbols, and abbreviations should follow the tentative recommendations described in *J Biol Chem* 262:7-11 (1987).

References: In the text, cite references by name and date. For more than two authors, use the first surname and et al. For example, Doe et al., 1991. If there is more than one work by an author in the same year, include a, b, c, as required for successive entries. For example, Doe 1991; Doe 1991a; Doe 1991b. In the references section, list all entries alphabetically, include the complete title of the article cited, and the names of all authors cited. Journal abbreviations should follow the *Index Medicus* style. In the following examples, notice the punctuation. Do not use all capitals; do not underline.

Journal articles:

Pockwinse SM, Wilming LG, Conlon DM, Stein GS, Lian JB (1992): Expression of cell growth and bone specific genes at single cell resolution during development of bone tissue-like organization in primary osteoblast cultures. *J Cell Biochem* 49:310-323.

Books:

Lamb CJ, Beachy RN (1990): "Plant Gene Transfer." New York: Wiley-Liss.

Articles in books:

Evans GA, Evans KC (1990): Strategies for physical mapping of complex genomes using cosmid clones. In Lamb CJ, Beachy RN (eds): "Plant Gene Transfer." New York: Wiley-Liss, pp 39-46.

Indexing: Supply 5-10 key words or phrases (not in title) for indexing purposes and a shortened title of not more than 40 characters to be used as a running head.

ELECTRONIC SUBMISSION OF ARTICLES

Authors are strongly encouraged to deliver the final, accepted version of their manuscripts on diskette.

Storage medium: 5 $\frac{1}{4}$ - or 3 $\frac{1}{2}$ -inch diskette in IBM MS-DOS, Windows, or Macintosh format.

Software: WordPerfect* 5.1 (or later) is preferred. However, manuscripts prepared on any microcomputer wordprocessor are acceptable. The use of desktop-publishing software (Aldus PageMaker*, Quark Xpress*, etc.) is discouraged. If you prepared your manuscript with such a program, export the text to a wordprocessing format.

Format: Keep the document as simple as possible. Refrain from any complex formatting.

Illustrations: Submission of electronic illustrations is encouraged, but not required. Submit illustrations on a separate diskette from the text. EPS, TIFF, or native application files are acceptable. For greyscale and color figure submissions please contact us for more detailed instructions. Illustration files may be submitted on SyQuest* 44- or 88-megabyte cartridges, which will be returned after publication.

File name: Submit each article as a single file. Name each file with your last name (not to exceed 8 letters), followed by a period, plus the three-letter extension JCB. If your last name exceeds eight letters it should be truncated to fit. For example, files prepared by author Hendrickson would be named: Hendrick.JCB. If you are using a Macintosh, maintain the MS-DOS file-naming convention of eight letters, a period, and the three-letter extension.

Diskette label: Label all diskettes with your name, the file name, and the wordprocessing program used.

Paper copy: The diskette must be accompanied by hardcopy printout. If the diskette and paper copy differ, the paper copy will be considered the definitive version.

Electronic Submission Questions?

Jessica Hickman
John Wiley & Sons
Internet: jhickman@jwiley.com
Telephone: 212-850-8744
Fax: 212-850-8852