

MOLECULAR AND CELLULAR BIOLOGY

VOLUME 6 • AUGUST 1986 • NUMBER 8

Aaron J. Shatkin, *Editor in Chief* (1990)
*N.J. Center for Advanced
Biotechnology and Medicine
Piscataway, N.J.*

Harvey F. Lodish, *Editor* (1986)
*Whitehead Institute for Biomedical
Research
Cambridge, Mass.*

David J. L. Luck, *Editor* (1987)
*Rockefeller University
New York, N.Y.*

Louis Siminovitch, *Editor* (1990)
*Mount Sinai Hospital
Toronto, Canada*

Joan A. Steitz, *Editor* (1990)
*Yale University
New Haven, Conn.*

Paul S. Sypherd, *Editor* (1990)
*University of California
Irvine*

Robert Tjian, *Editor* (1991)
*University of California
Berkeley*

Harold E. Varmus, *Editor* (1989)
*University of California
San Francisco*

EDITORIAL BOARD

Frederick W. Alt (1987)
Arnold J. Berk (1988)
Alan Bernstein (1987)
Barbara K. Birshtein (1987)
J. Michael Bishop (1987)
Michael R. Botchan (1987)
David Botstein (1987)
Bruce P. Brandhorst (1987)
James R. Broach (1988)
Joan Brugge (1988)
Mario R. Capecchi (1987)
John A. Carbon (1987)
Lawrence A. Chasin (1988)
Nam-Hai Chua (1988)
Don W. Cleveland (1987)
Christopher Coleclough (1987)
Terrance G. Cooper (1987)
Elizabeth A. Craig (1988)
James E. Dahlberg (1987)
James E. Darnell, Jr. (1988)
G. N. Godson (1987)
Michael Green (1988)

Jack F. Greenblatt (1988)
Leonard P. Guarente (1988)
James E. Haber (1987)
Hidesaburo Hanafusa (1986)
Ari Helenius (1987)
Ira Herskowitz (1987)
James B. Hicks (1986)
Alan Hinnebusch (1988)
Michael J. Holland (1987)
Greg Hollis (1987)
Anita K. Hopper (1988)
Peter M. Howley (1988)
Tony Hunter (1986)
Larry Kedes (1988)
Robert S. Kerbel (1988)
Barbara Knowles (1986)
Marilyn Kozak (1988)
Monty Krieger (1986)
Arnold J. Levine (1987)
Susan Lindquist (1987)
Paul T. Magee (1988)
James Manley (1986)

Steven McKnight (1986)
Janet E. Mertz (1987)
Robert L. Metzenberg (1988)
Robert K. Mortimer (1988)
Paul Neiman (1986)
Joseph R. Nevins (1987)
Carol Newlon (1988)
Harvey L. Ozer (1988)
Mary Lou Pardue (1988)
Carl S. Parker (1987)
Ira H. Pastan (1988)
David Patterson (1988)
Gianni Piperno (1988)
John R. Pringle (1988)
Jean-Paul Revel (1988)
Daniel B. Rifkin (1988)
G. S. Roeder (1988)
Robert G. Roeder (1988)
Naomi E. Rosenberg (1988)
Norman P. Salzman (1988)
Paul Schedl (1987)
Randy W. Schekman (1988)

Milton J. Schlesinger (1986)
Fred Sherman (1988)
Anna Marie Skalka (1986)
Arthur Skoultschi (1988)
Frank Solomon (1988)
Pamela Stanley (1988)
Bruce Stillman (1988)
Bill Sugden (1988)
Jack Szostak (1987)
Lawrence H. Thompson (1988)
Shirley M. Tilghman (1987)
Jonathan R. Warner (1987)
Alan M. Weiner (1987)
Harold Weintraub (1988)
Reed B. Wickner (1988)
Fred Winston (1988)
Owen Witte (1988)
Elton T. Young (1987)
Michael Young (1988)
Edward Ziff (1988)

Helen R. Whiteley, *Chairman, Publications Board*
Linda M. Illig, *Managing Editor, Journals*

Kirk Jensen, *Director of Publications*
Linda M. Illig, *Production Editor*

Molecular and Cellular Biology (ISSN 0270-7306) is devoted to the advancement and dissemination of fundamental knowledge concerning the molecular biology of eucaryotic cells, of both microbial and higher organisms. Instructions to authors are published in the January issue each year; reprints are available from the editors and the Publications Department. The journal is published monthly, one volume per year. The nonmember subscription price is \$150 per year; single copies are \$21. The member subscription price is \$41 (foreign \$54 [surface rate]) per year; single copies are \$7. Correspondence relating to subscriptions, reprints, defective copies, availability of back issues, lost or late proofs, disposition of submitted manuscripts, and general editorial matters should be directed to the ASM Publications Department, 1913 I St., NW, Washington, DC 20006 (area 202 833-9680).

Claims for missing issues from residents of the United States, Canada, and Mexico must be submitted within 3 months after publication of the issues; residents of all other countries must submit claims within 6 months of publication of the issues. Claims for issues missing because of failure to report an address change or for issues "missing from files" will not be allowed.

Second-class postage paid at Washington, DC 20006, and at additional mailing offices.

POSTMASTER: Send address changes to *Molecular and Cellular Biology*, ASM, 1913 I St., NW, Washington, DC 20006. Made in the United States of America.

Copyright © 1986, American Society for Microbiology.
All Rights Reserved.

日本：価格は外貨表示とは関係なく円建。

The code at the top of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal use or for personal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per-copy fee through the Copyright Clearance Center Inc., 21 Congress St., Salem, MA 01970, for copying beyond that permitted by Sections 107 and 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale.

Author Index

- Adam, Stephen A., 2932
Aronow, Bruce, 2957
- Baltz, Theo, 2950
Bannon, Gary A., 3014
Barka, Tibor, 2984
Barnes, Debra A., 2828
Boose, Jeri A., 2820
Buck, Greg, 2950
Buskin, Jean N., 2855
Butel, Janet S., 2990
Buttimore, Carol, 2895
- Carter, Barrie J., 2884
Cassidy, Brandt G., 2766
Chamberlain, Jeffrey S., 2855
Christy, Barbara A., 2910
Coffino, Philip, 2865
- Dana, Sharon L., 2865
Darbre, Philippa, 2847
Deuel, Thomas F., 3018
Dixit, Aparna, 2774
Dreyfuss, Gideon, 2932
Drohan, William, 3018
Dubin, Robert A., 2757
- Eisen, Harvey, 2950
Elbrecht, Alex, 2784
Evans, Glen A., 2923
- Faust, Emanuel A., 3005
- Garrard, William T., 3010
- Gluzman, Yakov, 2872
Gonzalez, Frank J., 2969
Gorovsky, Martin A., 3014
Gross, David S., 3010
Gubits, Ruth M., 2984
- Hanafusa, Hidesaburo, 2839
Hardwick, James P., 2969
Hassell, John A., 2872
Hauschka, Stephen D., 2855
Henderson, Ellen J., 2820
Hogan, Aileen, 3005
Holliday, R., 2944
Hollingsworth, Paula, 2957
Hurst, Helen C., 2994
- Ingraham, Holly A., 2923
- Jaye, Michael, 3018
Jaynes, James B., 2855
Jeggio, P. A., 2944
Johnson, Jane E., 2855
Jones, Nicholas C., 2994
- Kelly, Thomas J., 2903
King, Roger J. B., 2847
Knepper, Janice E., 2990
Kreidberg, Jordon A., 2903
- Langelier, Yves, 2977
Levine, Steven E., 3018
Lumpkin, Charles K., 2990
- Maciag, Thomas, 3018
- Martin, Robert G., 2916
Massie, Bernard, 2872
Matsushime, Hitoshi, 3000
McCartan, Kathleen, 2957
McConlogue, Lisa, 2865
Michels, Corinne A., 2757
Miller, A. Dusty, 2895
Morimoto, Richard I., 2994
- Nakagawa, Terry, 2932
Needleman, Richard B., 2757
Nickol, Joanne, 2916
Nobile, Carlo, 2916
Nottenburg, Carol, 2800
- Oakley, Berl R., 2963
Oakley, C. Elizabeth, 2963
Olson, Eric N., 2792
O'Malley, Bert W., 2784
- Page, Martin, 2847
Pastorcic, Martine, 2784
Patrick, Joseph, 2957
Pederson, David S., 3014
Pereira-Smith, Olivia M., 2990
Perkins, Edward L., 2757
Pilon, Louise, 2977
- Raubaud, Anna, 2950
Rhoads, Douglas D., 2774
Ricca, George, 3018
Rothblum, Lawrence I., 2766
Roufa, Donald J., 2774
Royal, André, 2977
- Scangos, George A., 2910
Shalloway, David, 2807
Shibuya, Masabumi, 3000
Shupe, Kathy, 3014
Smith, James R., 2990
Song, Byung-Joon, 2969
Spizz, Gwendolyn, 2792
Sudol, Marius, 2839
Swanson, Maurice S., 2932
- Tal, Jacov, 2884
Thorner, Jeremy, 2828
Toll, Darwin, 2957
Tong, Benton D., 3018
Tratschin, Jon Duri, 2884
Tsai, Ming-Jer, 2784
Tsai, Sophia Y., 2784
- Ullman, Buddy, 2957
- van der Noen, Hendrika M.,
2984
Varmus, Harold E., 2800
- Wang, Heng, 2784
Wang, Lu-Hai, 3000
Weil, Clifford F., 2963
Woodruff, Teresa K., 2932
Wu, Barbara J., 2994
- Yaciuk, Peter, 2807
Yang-Yen, Hsin-Fang, 2766