

Clinical Cancer Research



An Official Journal
of the
American Association
for
Cancer Research

**American Association for
Cancer Research, Inc.**
Executive Director and
Director of Publications
Margaret Foti

Publications Staff
Associate Director of Publications
Mary Anne Mennite
Manager, Editorial Services
Heide M. Pusztay
Senior Staff Editor
Kathleen C. Assenmacher
Staff Editors
Ronald M. Vitale
Carolina Miranda
Editorial Associate
Michelle K. Bruni
Staff Assistant
Mary Ellen Piringa
Senior Editorial Assistant
Theresa A. Griffith
Editorial Assistant
Brenda Roberson
**Journal Manager, Cancer
Epidemiology, Biomarkers &
Prevention**
Michael J. Beveridge
**Senior Editorial Assistant, Cancer
Epidemiology, Biomarkers &
Prevention**
Cecilia Gallo

Administrative Staff
Director of Administration
Adam D. Blistein
Controller
Joan D. Ritchie
Manager, Meetings and Exhibits
Jeffrey M. Ruben
Assistant Director, Administration
Jenny Anne Horst-Martz
Assistant to the Executive Director
Ruth E. Fortson
**Membership Development
Coordinator**
Robin E. Felder
Administrative Assistant
Margaret A. Pickels
Systems Specialist
Lydia I. Rodriguez
Secretary
Malika L. Wright
Editorial Assistant
Diana F. Certo
Office Clerk
James J. Waters
Data Entry Clerk
Robert A. Simms II

AACR Publications Department
Public Ledger Building, Suite 826
150 South Independence Mall West
Philadelphia, PA 19106-3483
Phone: (215) 440-9300
FAX: (215) 440-9354
E-mail: pubs@aacr.org

Editor-in-Chief

John Mendelsohn
*Growth factors, hormones, cell growth;
radiation therapy, surgery, subspecialty investigation*

Deputy Editor

Waun Ki Hong
Clinical trials targeted at specific malignancies, chemoprevention

Senior Editors

Bruce A. Chabner
*Clinical pharmacology and pharmacokinetics,
drug metabolism, drug sensitivity and resistance,
drug interactions*

Michael B. Kastan
Cell cycle regulation, cell death

Lance A. Liotta
Pathology, metastasis

David Sidransky
Molecular pathogenesis, molecular correlates

Associate Editors

Martin D. Abeloff
Carmen J. Allegra
Laurence H. Baker
Charles M. Balch
Barthel Barlogie
Robert C. Bast, Jr.
Colin B. Begg
Joseph R. Bertino
Ronald H. Blum
George J. Bosl
Paul A. Bunn, Jr.
Michael A. Caligiuri
Alfred E. Chang
Paul B. Chapman
Michaële C. Christian
Curt I. Civin
Ronald Crystal
William S. Dalton
Albert B. Deisseroth
Patricia K. Donahoe
Ross C. Donehower
Timothy J. Eberlein
Merrill J. Egorin
Frederick R. Eilber
Robert M. Elashoff
Paul F. Engstrom
Eric R. Fearon

Isaiah J. Fidler
Richard M. Fox
Michael A. Friedman
Zvi Y. Fuks
Stephen L. George
Giuseppe Giaccone
Luca Gianni
Anna Giuliano
Eli Glatstein
David W. Golde
Mark R. Green
Jerome E. Groopman
William N. Hait
Adrian L. Harris
Curtis C. Harris
Sandra J. Horning
William J. Hoskins
Janet A. Houghton
Stephen B. Howell
Daniel C. Ihde
John T. Isaacs
Robert B. Jenkins
David H. Johnson
V. Craig Jordan
Barton A. Kamen
S. B. Kaye
David P. Kelsen

Paul Sondel
*Immunotherapy and cytokines—preclinical, and
clinical trials*

Beverly A. Teicher
*Experimental therapeutics, preclinical
pharmacology, combined modality regimens,
animal therapy models*

Jeffrey M. Trent
Genetics, cytogenetics

David Khayat
John M. Kirkwood
Donald W. Kufe
Steven M. Larson
John S. Lazo
Victor A. Levin
Allen Lichter
Marc E. Lippman
Edison T. Liu
Patrick J. Loehrer, Sr.
Dan L. Longo
Michael T. Lotze
Maurie Markman
William P. McGuire III
Roland Mertelsmann
Frank L. Meyskens, Jr.
John D. Minna
Bruce Minsky
Monica Morrow
James L. Mulshine
Sharon B. Murphy
Charles E. Myers
Larry Norton
Richard J. O'Reilly
Robert F. Ozols
Ira Pastan
William P. Peters

Herbert M. Pinedo
Philip A. Pizzo
William K. Plunkett
Jerome B. Posner
Derek Raghavan
Mark J. Ratain
John C. Reed
Ralph A. Reisfeld
Jerome Ritz
Jack A. Roth
Eric B. Rowinsky
Edward A. Sausville
Howard I. Scher
Richard L. Schilsky
Richard M. Simon
John F. Smyth
Jeffrey A. Sosman
Michael B. Sporn
Louise C. Strong
Masaaki Terada
Daniel D. Von Hoff
Raymond P. Warrell, Jr.
Jane Weeks
Ralph R. Weichselbaum
Theresa L. Whiteside
Leonard A. Zwelling

Editorial Office

Administrative Editor, Beth Notzon; *Editorial Secretary*, Sue L. Davis; Department of Scientific Publications—227, The University of Texas M. D. Anderson Cancer Center, 1515 Holcombe Boulevard, Houston, Texas 77030. Phone: (713) 792-6014; Fax: (713) 792-6016.

Accelerated mailing of all AACR journals to AACR members in Japan is supported by a generous grant from the Banyu Pharmaceutical Company, Tsukuba, Japan.

Clinical Cancer Research is published monthly, one volume per year, by the American Association for Cancer Research, Inc. (AACR). Except for members of the AACR, all subscriptions are payable in advance to AACR, Subscription Office, P.O. Box 11806, Birmingham, AL 35202 [Phone: (800) 633-4931 or (205) 995-1567; FAX: (205) 995-1588], to which all business communications, remittances (in United States currency or its equivalent), and subscription orders should be sent. In Japan, send orders and inquiries to (sole agent): USACO Corporation, Tsutsumi Bldg., 13-12, Shimbashi 1-chome, Minato-ku, Tokyo 105, Japan; Tel. (03) 502-6471. Individuals who are not AACR members may subscribe to Volume 4 (1998) of *Clinical Cancer Research* at the rate of \$120 U.S./\$160 foreign. *Clinical Cancer Research* is only available to institutions as a combined subscription with *Cancer Research*. The combined 1998 institutional subscription price of \$795 U.S./\$925 foreign includes \$210 U.S./\$250 foreign for a subscription to *Clinical Cancer Research*. (Foreign subscription cost includes cost of surface mail. For faster delivery, expedited mailing rates are available by contacting the AACR Publications Department.) Canadian subscribers should add 7% GST. Changes of address notification should be sent 60 days in advance and include both old and new addresses. Member subscribers should send address changes to: AACR Member Services, Public Ledger Bldg., Suite 826, 150 South Independence Mall West, Philadelphia, PA 19106-3483. Nonmember subscribers should send changes of address to: AACR Subscription Office, P.O. Box 11806, Birmingham, AL 35202. Copies of the journal which are undeliverable because of address changes will be destroyed.



Q9H4-9DL-TKJ8