

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 Editors
Kathleen C. Assenmacher
Pamela R. Arnold

Staff Editors
Ronald M. Vitale
Carolina Miranda

Editorial Associate
Michelle K. Bruni

Staff Assistant
Mary Ellen Pirring
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

Michaele 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

Ronald H. Blum

David W. Golde

Mark R. Green

Jerome E. Groopman

William N. Hait

Adrian L. Harris

Curtis C. Horning

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

Colleen M. Hubona, *Executive Editor*, Department of Educational Publishing Services—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. One-year subscriptions to *Clinical Cancer Research* are made available to third-year hematology/oncology fellows in the United States through the generous support of Rhône-Poulenc Rorer Oncology.

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., 1-3-12, 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.



3HS8-NN8-67J3