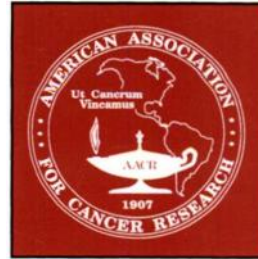


An Official Journal
of the
American Association
for
Cancer Research



Clinical Cancer Research

August 1995 • Volume 1 Number 8
PP. 785-933 • ISSN 1078-0432



AMERICAN ASSOCIATION FOR CANCER RESEARCH SCIENTIFIC CONFERENCES

OCTOBER 14-18, 1995

Cytokines and Cytokine Receptors

Chairperson: Steven Gillis, Seattle, WA
The Sagamore, Bolton Landing (Lake George),
NY

NOVEMBER 5-9, 1995

***Cancer: The Interface Between
Basic and Applied Research***

Chairpersons: Bert Vogelstein, Baltimore, MD;
Stephen H. Friend, Seattle, WA; John D.
Minna, Dallas, TX
Stouffer Harborplace Hotel, Baltimore, MD

NOVEMBER 17-21, 1995

***Novel Strategies Against
Resistant Cancers***

Chairpersons: Victor Ling, Toronto, Ontario,
Canada; Daniel D. Von Hoff, San Antonio, TX
Sanibel Harbour Resort & Spa, Ft. Myers, FL

DECEMBER 2-6, 1995

***The Molecular Basis of
Gene Transcription***

Chairperson: Tom Curran, Nutley, NJ
Hotel Del Coronado, San Diego, CA

JANUARY 17-20, 1996

Cancer and the Cell Cycle

Joint Meeting with the Swiss Institute for
Experimental Cancer Research
Chairpersons: Edward E. Harlow, Charlestown,
MA; Viesturs Simanis, Lausanne, Switzerland
Centre Hospitalier Universitaire Vaudois,
Lausanne, Switzerland

FEBRUARY 19-25, 1996

***Cancer Susceptibility Genes and
Molecular Carcinogenesis***

Chairpersons: Curtis C. Harris, Bethesda, MD;
Allan Balmain, Glasgow, Scotland; Kenneth
Olden, Research Triangle Park, NC
Keystone Resort, Keystone, CO

MARCH 1-5, 1996

***Proteases and Their Inhibitors
in Cancer***

Chairpersons: Lynn M. Matrisian, Nashville, TN;
Bonnie F. Sloane, Detroit, MI
Marriott's Bay Point Resort, Panama City
Beach, FL

APRIL 20-24, 1996

87th Annual Meeting

Chairperson: Lorraine J. Gudas, New York, NY
Washington D.C. Convention Center, Washington,
D.C.

Abstract Deadline: December 1, 1995

JUNE 8-12, 1996

Inducible Genomic Responses

Chairpersons: William T. Beck, Memphis, TN;
John A. Hickman, Birmingham, England;
Richard I. Morimoto, Evanston, IL
Skamania Lodge, Stevenson (Columbia River
Gorge), WA

OCTOBER 2-6, 1996

***Novel Approaches in Blood and
Marrow Transplantation***

Second Annual Meeting of the American Society
for Blood and Marrow Transplantation
Chairpersons: O. Michael Colvin, Baltimore, MD;
Bruce R. Blazar, Minneapolis, MN
Hotel Del Coronado, San Diego, CA

OCTOBER 6-9, 1996

***Carcinogenesis from Environmental
Pollution: Assessment of Human Risks
and Strategies for Prevention***

Joint Meeting with International Agency for
Research on Cancer
Chairpersons: Frederica Perera, New York, NY;
Paul Kleihues, Lyon, France
Hotel Gellért, Budapest, Hungary

OCTOBER 19-23, 1996

Programmed Cell Death

Chairperson: Stanley J. Korsmeyer, St. Louis, MO
The Sagamore, Bolton Landing (Lake George), NY

NOVEMBER 16-20, 1996

Disrupted Transcription Factors in Cancer

Chairpersons: Peter K. Vogt, La Jolla, CA; Frank
J. Rauscher III, Philadelphia, PA
Hotel Del Coronado, San Diego, CA

AACR members will receive brochures on the
above special conferences as soon as they are
available. Nonmembers should call or write:

American Association for Cancer Research
Public Ledger Building, Suite 816
150 South Independence Mall West
Philadelphia, PA 19106-3483
215-440-9300 • 215-440-9313 (FAX)

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

Staff Editors

Lisa A. Chippendale

Pamela M. Grebow

Michael J. Beveridge

Kathleen C. Assenmacher

Pamela R. Arnold

Laurie B. Baker

Supervisor, Manuscript Processing

Margaret A. Pickels

**Assistant Supervisor,
Manuscript Processing**

Theresa A. Griffith

Staff Assistant

Mary Ellen Pirring

Editorial Assistants

Valerie L. Taylor

Andrea Conrad

Katherine V. Pawlowski

Bethann Massarella

Administrative Staff

Director of Administration

Adam D. Blistein

Controller

Joan D. Brokenshire

Coordinator, Financial

Operations

George L. Moore

Meetings Coordinator

Jeffrey M. Ruben

Meeting Planner

Carole L. Kanoff

Public Information Coordinator

Jenny Anne Horst-Martz

Executive Assistant for Programs

Ruth E. Fortson

Administrative Assistant

Robin E. Felder

Systems Specialist

Lydia I. Rodriguez

Secretary

Malika L. Wright

Editorial Secretary

Diana F. Certo

Office Clerk

James J. Waters

Data Entry Clerk

Robert A. Simms II

AACR Publications Department

Public Ledger Building, Suite 816

150 South Independence Mall West

Philadelphia, PA 19106-3483

Phone: (215) 440-9300;

FAX: (215) 440-9354

Editor-in-Chief

John Mendelsohn

Associate Editors

Martin D. Abeloff

David S. Alberts

Colin B. Begg

Joseph R. Bertino

Clara D. Bloomfield

George J. Bosl

Micheale C. Christian

Patricia Donahoe

Robert M. Elashoff

Isaiah J. Fidler

Stephen H. Friend

Philip D. Greenberg

Waun Ki Hong

Daniel C. Ihde

Lance A. Liotta

Marc E. Lippman

Michael T. Lotze

John D. Minna

Sharon B. Murphy

Richard J. O'Reilly

Ira Pastan

Herbert M. Pinedo

Jerome Ritz

Richard L. Schilsky

David Sidransky

Paul Sondel

Michael B. Sporn

David R. Spriggs

Louise C. Strong

Jeffrey M. Trent

Daniel D. Von Hoff

Jane Weeks

Ralph R. Weichselbaum

**Editorial Advisory
Board**

Carmen J. Allegra

James O. Armitage

Laurence H. Baker

Charles M. Balch

Barthel Barlogie

Robert C. Bast, Jr.

Ronald H. Blum

Paul A. Bunn, Jr.

Michael A. Caligiuri

Alfred E. Chang

Paul B. Chapman

Bruce D. Cheson

Curt I. Civin

William S. Dalton

Albert B. Deisseroth

Ross C. Donehower

Timothy J. Eberlein

Merrill J. Egorin

Frederick R. Eilber

Paul F. Engstrom

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

Sandra J. Horning

William J. Hoskins

Janet A. Houghton

Stephen B. Howell

John T. Isaacs

Robert B. Jenkins

David H. Johnson

V. Craig Jordan

Barton A. Kamen

Michael B. Kastan

S. B. Kaye

David P. Kelsen

David Khayat

John M. Kirkwood

Donald W. Kufe

Steven M. Larson

John S. Lazo

Victor A. Levin

Allen Lichten

Patrick J. Loehrer, Sr.

Dan L. Longo

Maurie Markman

William P. McGuire III

Roland Mertelsmann

Frank L. Meyskens, Jr.

Monica Morrow

James L. Mulshine

Charles E. Myers

Larry Norton

Robert F. Ozols

William P. Peters

Philip A. Pizzo

William K. Plunkett

Jerome B. Posner

Derek Raghavan

Mark J. Ratain

John C. Reed

Ralph A. Reisfeld

Jack A. Roth

Eric B. Rowinsky

Edward A. Sausville

Howard I. Scher

Richard M. Simon

John F. Smyth

Jeffrey A. Sosman

Masaaki Terada

Theresa L. Whiteside

Leonard A. Zwelling

James Batule

Editorial Assistant

Office of the

Editor-in-Chief

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 *Clinical Cancer Research*, P.O. Box 3000, Denville, NJ 07834 [Telephone: (800) 875-2997 or (201) 627-2427; FAX: (201) 627-5872], 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 1 (1995) of *Clinical Cancer Research* at the rate of \$95 U.S./\$115 foreign. *Clinical Cancer Research* is only available to institutions as a combined subscription with *Cancer Research*. The combined 1995 institutional subscription price of \$495 U.S./\$575 foreign includes \$65 for a subscription to *Clinical Cancer Research*. 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 816, 150 South Independence Mall West, Philadelphia, PA 19106-3483. Nonmember subscribers should send changes of address to: *Clinical Cancer Research*, P.O. Box 3000, Denville, NJ 07834. Copies of the journal which are undeliverable because of address changes will be destroyed. Accelerated mailing of journals to AACR members in Japan is supported by a generous grant from the Banyu Pharmaceutical Company.



Notice to Members of the American Association for Cancer Research

Officers for 1995-1996

President: Joseph R. Bertino, Memorial Sloan-Kettering Cancer Center, New York, NY 10021

President Elect: Louise C. Strong, UT M. D. Anderson Cancer Center, Houston, TX 77030

Treasurer: Bayard D. Clarkson, Memorial Sloan-Kettering Cancer Center, New York, NY 10021

Executive Director: Margaret Foti, AACR, Public Ledger Bldg., Suite 816, Philadelphia, PA 19106-3483

Annual Dues

The annual dues of active members of the American Association for Cancer Research are \$160, \$40 of which may be applied to a subscription to *Clinical Cancer Research*. Corresponding members of the Association will be charged an appropriate fee to offset second-class postage costs. Payment of dues and changes of address of members of the Association should be sent promptly to Margaret Foti, Executive Director, American Association for Cancer Research, Public Ledger Bldg., Suite 816, 150 South Independence Mall West, Philadelphia, PA 19106-3483; Telephone: (215) 440-9300; FAX: (215) 440-9313.

Submission of Manuscripts

Clinical Cancer Research, a new journal of the American Association for Cancer Research, publishes original articles describing clinical research on the cellular and molecular characterization, prevention, diagnosis, and therapy of human cancer. Its focus is on innovative clinical research and translational research which bridges the laboratory and the clinic. *Clinical Cancer Research* is especially interested in clinical trials evaluating new treatments for cancer; research on molecular abnormalities that predict incidence, response to therapy, and outcome; and laboratory studies of new drugs and biological agents that will lead to clinical trials in patients. All submissions undergo peer review. Papers should be sent to John Mendelsohn, M.D., Editor-in-Chief, *Clinical Cancer Research*, Department of Medicine, Memorial Sloan-Kettering Cancer Center, 1275 York Ave, New York, NY 10021; Telephone: (212) 639-5878; FAX: (212) 772-8375.

Back Issues and Single Copy Sales of the Journal

Copies of back stock of the journal may be ordered from *Clinical Cancer Research*, P.O. Box 3000, Denville, NJ 07834 [Telephone: (800) 875-2997 or (201) 627-2427; FAX: (201) 627-5872]. As long as supplies permit, single copies will be sold by this company at \$12.50/copy. Orders outside the U.S. add \$1.50/copy to offset postage costs.

Advertisements

Advertisement insertion orders and copy must be received one month prior to the date of issue in which the advertisement is to be published. The journal is mailed on approximately the 1st day of the month of issue. Inquiries about advertising should be directed to: M. J. Mrvica Associates, Inc., 155 South White Horse Pike, Berlin, NJ 08009 [Telephone: (609) 768-9360; FAX: (609) 753-0064].

Copyright and Permissions

Authors who wish to publish in *Clinical Cancer Research* must formally transfer copyright to the proprietor of the journal, the American Association for Cancer Research, Inc. It is understood by this transfer that the authors relinquish all exclusive rights of copyright ownership, including the rights of reproduction, derivation, distribution, sale, and display.

Authors who prepared their articles as part of their official duties as employees of the U.S. Federal Government are not

required to transfer copyright to the American Association for Cancer Research, Inc., since these articles are considered to be in the public domain. In the case of articles supported by federal grants or contracts, copyright transfer to the American Association for Cancer Research, Inc., is required. The federal government may retain a nonexclusive license to publish or republish such material.

The Journal will routinely allow authors (or others with the permission of the authors) to include select parts of a copyrighted article in reviews, books, or subsequent papers, upon written request to the AACR Director of Publications. Requests to reproduce an article in its entirety will be considered on an individual basis and permission may be granted contingent upon payment of an appropriate copyright fee. All reproduction requests must include a brief description of intended use and a stamped, self-addressed envelope. Third parties should obtain the approval of the authors *before* corresponding with the AACR.

Those who wish to photocopy articles should contact the AACR Publications Department [Telephone: (215) 440-9300; FAX: (215) 440-9354].

No responsibility is accepted by the Editors, by the American Association for Cancer Research, Inc., or by Cadmus Journal Services for the opinions expressed by contributors or for the content of the advertisements.

Clinical Cancer Research is abstracted and/or indexed in *Cancer Lit* and *Chemical Abstracts*.

Clinical Cancer Research (ISSN 1078-0432) is published monthly by the American Association for Cancer Research, Inc., Public Ledger Bldg., Suite 816, 150 South Independence Mall West, Philadelphia, PA 19106-3483 for \$40 annually for members and \$95 for individual nonmembers. *Clinical Cancer Research* is only available to institutions as a combined subscription with *Cancer Research*. The combined 1995 institutional subscription price of \$495 includes \$65 for a subscription to *Clinical Cancer Research*. Second-class postage paid at Philadelphia, PA and additional mailing offices. POSTMASTER: Send address changes to *Clinical Cancer Research*, P.O. Box 3000, Denville, NJ 07834. Copyright 1995 by the American Association for Cancer Research, Inc. Printed on acid-free paper in the U.S.A.

AACR SPECIAL CONFERENCE IN CANCER RESEARCH

Cytokines and Cytokine Receptors



October 14-18, 1995
The Sagamore, Bolton Landing (Lake George), New York

CONFERENCE CHAIRPERSONS

Steven Gillis / Seattle, WA
Douglas E. Williams / Seattle, WA

SCIENTIFIC PROGRAM

Keynote Address

Joost J. Oppenheim / Frederick, MD

Cytokines and Hematopoiesis

Manfred R. Keller / Ann Arbor, MI

Stewart D. Lyman / Seattle, WA

William P. Sheridan / Thousand Oaks, CA

Michael J.P. Lawman / Orlando, FL

Jonathan Drachman / Seattle, WA

Pamela Hunt / Thousand Oaks, CA

Connie J. Eaves / Vancouver, B.C. Canada

Katherine J. Turner / Cambridge, MA

Cytokines and Lymphopoiesis

Michael I. Lotze / Pittsburgh, PA

Serge LeBecque / Dardilly, France

David H. Lynch / Seattle, WA

Mary K. Kennedy / Seattle, WA

Teresa M. Foy / Lebanon, NH

John A. Schmidt / Rahway, NJ

Cytokines and Infectious Disease/ Cytokine Effects-Implications for Disease

Steven A. Miles / Los Angeles, CA

Steven G. Reed / Seattle, WA

William E. Paul / Bethesda, MD

Lawrence M. Lichtenstein / Baltimore, MD

Cytokine Receptors - Biological and Clinical Implications

Marc Feldmann / London, England

Thomas A. Waldmann / Bethesda, MD

Roy A. Black / Seattle, WA

Cytokine Signal Transduction

Tadamitsu Kishimoto / Osaka, Japan

Thomas J. Schall / Palo Alto, CA

Klaus Pfizenmaier / Stuttgart, Germany

Melanie K. Spriggs / Seattle, WA

David J. Pickup / Durham, NC

Additional Speakers to be Announced

*Applicants are encouraged to submit
abstracts for poster presentation.*

Information and Application Forms

American Association for Cancer Research
Public Ledger Building, Suite 816
150 South Independence Mall West
Philadelphia, PA 19106-3483
215-440-9300 215-440-9313 (FAX)