

Molecular Cancer Therapeutics

The Journal of Cancer Drug Discovery & Preclinical Development

AACR

American Association
for Cancer Research

AN OFFICIAL JOURNAL OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH

Editor-in-Chief

Beverly A. Teicher

Deputy Editors

Stephen W. Fesik
Paul Workman

Senior Editors

Ian Collins
Tejal Desai
Peter J. Houghton
Candace S. Johnson
Ricky W. Johnstone
Razelle Kurzrock
John S. Lazo
Guillermina Lozano
Brion W. Murray
Dario Neri
Martine F. Roussel
Peter Senter

Editorial Staff

Managing Editor

Gregory Pavlovcak

Associate Editor

Richard W. Davis IV

Associate Journal Manager

Crystal Cheepudom

Editorial Staff

Nageena Laing
Meredith A. Kahn

Special Content Manager

Chris Vesce

Senior Production Editor

Jennifer L. Harper

Editorial Board

Robert T. Abraham	Sayed S. Daoud	I. David Goldman	Robert A. Newman
Rajesh Agarwal	Marcia I. Dawson	Michael M. Gottesman	Barry R. O'Keefe
Adriana Albini	William A. Denny	Lorraine J. Gudas	Pier Paolo Pandolfi
Kari Alitalo	Paul Dent	Stephen B. Howell	Ira Pastan
Suresh V. Ambudkar	Channing J. Der	Rakesh K. Jain	Maurizio Pellecchia
Paul A. Andrews	Vishva M. Dixit	Peter A. Jones	Yves Pommier
Avi Ashkenazi	Ethan Dmitrovsky	Craig T. Jordan	C. Patrick Reynolds
André S. Bachmann	Suzanne A. Eccles	Juliane M. Jürgensmeier	Edward A. Sausville
Raffaele Baffa	Heinz-Herbert Fiebig	Robert S. Kerbel	Jeffrey Settleman
Rebecca G. Bagley	William D. Figg, Sr.	Donald W. Kufe	Shivendra V. Singh
Albert S. Baldwin, Jr.	Paul B. Fisher	Michihiko Kuwano	David B. Solit
Laura E. Benjamin	Antonio Fojo	Daruka Mahadevan	Michael B. Sporn
Darell D. Bigner	Arthur E. Frankel	Srid'har Mani	Bin Tean Teh
Michael L. Bittner	Stephen V. Frye	Lawrence D. Mayer	Carter Van Waes
Thomas F. Bumol	Simone Fulda	David J. McConkey	Kristiina Vuori
Robert M. Campbell	Susan M. Galbraith	Frank McCormick	Shaomeng Wang
David A. Cheresh	Ram N. Ganapathi	Giovanni Melillo	David J. Waxman
James G. Christensen	Michelle D. Garrett	Ira Mellman	Tai Wai Wong
Steve R. Coats	Andreas J. Gescher	Paul S. Mischel	Amy E. Wright
Barbara A. Conley	David A. Gewirtz	Brett P. Monia	Jingwu Xie
Robert A. Copeland	Amato J. Giaccia		Leigh S. Zawel
			Yuesheng Zhang

Editorial Office: *Molecular Cancer Therapeutics* [ISSN: 1535-7163 (Print); ISSN: 1538-8514 (Online)] is published monthly, one volume per year, by the American Association for Cancer Research, Inc.; 615 Chestnut Street, 17th Floor, Philadelphia, PA 19106-4404. Periodicals postage paid at Philadelphia, PA, and additional mailing offices. POSTMASTER: Send address changes to *Molecular Cancer Therapeutics*, Member Services, AACR, 615 Chestnut St., 17th Floor, Philadelphia, PA 19106-4404 or E-mail: membership@aacr.org. Copyright 2019 by the American Association for Cancer Research, Inc. © The paper used in this publication meets the requirements of ANSI/NISO Z39.48-1992 (Permanence of Paper).

Molecular Cancer Therapeutics

Publishing Information

AACR
American Association
for Cancer Research

Print ISSN: 1535-7163 • Online ISSN: 1538-8514

AACR Officers

Elizabeth M. Jaffee, President
Elaine R. Mardis,
President-Elect
Michael A. Caligiuri, Past
President
William N. Hait, Treasurer
Margaret Foti, Chief Executive
Officer

Publications Committee

Victor E. Velculescu,
Chairperson
Dafna Bar-Sagi
Mary Helen Barcellos-Hoff
Michael E. Berens
John D. Carpten
Maura L. Gillison
Rakesh K. Jain
Pasi A. Jänne
Gerrit A. Meijer
Gordon B. Mills
Steffi Oesterreich
William Pao
Gloria M. Peterson
David R. Piwnica-Worms
Charles W.M. Roberts
Alice T. Shaw
Lillian L. Siu
Saraswati V. Sukumar
Toshikazu Ushijima

Publishing Staff

Publisher
Christine B. Rullo
Director, Journal Operations and Systems
Daniel S. Evanko
Director, Journal Sales and Marketing
Nicola L. Hill
Director, Digital Publishing
Mark Jacobson
Associate Director, Production
Charlene Squibb
Assistant Director, Production
David Livewell
Assistant Director, Journal Marketing
Joanna Arnold
Assistant Director, Institutional Sales & Outreach
Karola Rac
Marketing and Creative Services
Senior Director
Paul Driscoll
Design Staff
Susan Moore

Scope

Molecular Cancer Therapeutics strives to be the top choice for publishing the best science in the discovery and preclinical development of novel therapeutic agents for oncology, preclinical studies of approved therapeutics, mechanisms of drug action, mechanisms of drug resistance, biomarkers of drug response, novel models and technologies, and occasional drug toxicity mechanisms. While the Journal's main focus is on small molecule and protein drugs, other molecular entities may be considered.

Molecular Cancer Therapeutics is abstracted and/or indexed in Current Contents/Clinical Medicine, MEDLINE, Science Citation Index, Scopus, and Web of Science.

Submission of Manuscripts

Online manuscript submission is welcomed at <http://mct.msubmit.net>. Before submitting a manuscript, please read the Instructions for Authors, which is available from the Journal's home page at <http://mct.aacrjournals.org>.

Publication Charges

Beginning with manuscripts submitted January 1, 2016 or after, articles will be published with the understanding that the author(s) will pay both a publication fee plus a color figure handling fee. Please see the Instructions for Authors, which are available from the Journal's home page at <http://mct.aacrjournals.org>.

Subscription Information

Nonmember Individuals
Subscriptions include print version with online access. Contacts listed below are for nonmember individual subscriptions.

USA and Rest of World (excluding Japan)
American Association for Cancer Research, 615 Chestnut Street, Philadelphia, PA 19106; 1-855-744-4667; pubsales@aacr.org

Japan
e-support@maruzen.co.jp;
journal@kinokuniya.co.jp; usaco@usaco.co.jp

International print subscriptions include cost of surface mail. Expedited mailing is available. Contact the American Association for Cancer Research for rates.

Site Licenses

For information about institutional site licenses, contact pubsales@aacr.org.

AACR Members

AACR members may opt to receive either a print subscription with online access to content or an online-only subscription. Contact membership@aacr.org or visit the membership page at www.aacr.org for more information.

Single Issue Sales

Subject to their availability, single or back issues may be purchased for \$60 (U.S.) or \$65 (outside the U.S.) each. The cost must be prepaid. Contact pubsales@aacr.org.

Claims

One-time claims for missing issues made within 120 days of the issue's publication will be honored, subject to availability. No credit or refund will be given if an issue is out of print at the time of claim.

AACR Members
membership@aacr.org

Nonmembers and Institutions
pubsales@aacr.org

Advertising Information

For information about advertising in AACR journals, contact Pharmaceutical Media Inc., 30 East 33rd St., 4th Floor, New York, NY 10016; 212-904-0360; Dsimone@pminy.com

Copyright and Permissions

Content printed in or disseminated by *Molecular Cancer Therapeutics* is protected by copyright. Authors who wish to publish material in *Molecular Cancer Therapeutics* must formally transfer copyright to the AACR. All authors must sign copyright transfer forms before the AACR can proceed with publication.

To read the complete AACR Copyright and Permissions Policy, visit <http://aacrjournals.org/content/authors/copyright-permissions-and-access>.