

ANTICANCER RESEARCH

International Journal of Cancer Research and Treatment

ISSN: 0250-7005

Volume 33, Number 3, March 2013

Contents

Review

- Radiotherapy Targeting Cancer Stem Cells: Current Views and Future Perspectives. K. OGAWA, Y. YOSHIOKA, F. ISOHASHI, Y. SEO, K. YOSHIDA, H. YAMAZAKI (*Osaka; Kyoto, Japan*) 747

Experimental Studies

- Poly (ADP-Ribose) Polymerase Inhibitor MK-4827 together with Radiation as a Novel Therapy for Metastatic Neuroblastoma. S. MUELLER, S. BHARGAVA, A.M. MOLINARO, X. YANG, I. KOLKOWITZ, A. OLOW, N. WEHMEIJER, S. ORBACH, J. CHEN, K.K. MATTHAY, D.A. HAAS-KOGAN (*San Francisco, CA; New York, NY, USA; Amsterdam, Netherlands*) 755
- Molecular Characteristics of Cancer Stem-like Cells Derived from Human Breast Cancer Cells. Y.D. YOO, D.H. HAN, J.M. JANG, A. ZAKRZEWSKA, S.-Y. KIM, C.Y. CHOI, Y.J. LEE, Y.T. KWON (*Seoul; Suwon, South Korea; Pittsburgh, PA, USA*) 763
- Serum DNA Hypermethylation in Patients with Bladder Cancer: Results of a Prospective Multicenter Study. S. HAUSER, M. KOGEJ, G. FECHNER, J. VON PEZOLD, R. VORREUTHER, G. LÜMMEN, S.C. MÜLLER, J. ELLINGER (*Bonn; Lindlar; Troisdorf, Germany*) 779
- Inhibition of AKT in Human Pancreatic, Renal and Colorectal Cancer Cells by Four Cardiac Hormones. W.P. SKELTON IV, M. SKELTON, D.L. VESELY (*Gainesville; Tampa, FL, USA*) 785
- Progesterone and Estrogen Prevent Cisplatin-induced Apoptosis of Lung Cancer Cells. M. GROTT, S. KARAKAYA, F. MAYER, F. BAERTLING, C. BEYER, M. KIPP, H.-G. KOPP (*Aachen; Tuebingen, Germany*) 791

Contents continued on the back cover

ANTICANCER RESEARCH

International Journal of Cancer Research and Treatment



ISSN (print): 0250-7005
ISSN (online): 1791-7530

Editorial Board

- B. B. AGGARWAL**, Houston, TX, USA
A. ARGIRIS, San Antonio, TX, USA
J. P. ARMAND, Toulouse, France
V. I. AVRAMIS, Los Angeles, CA, USA
R. C. BAST, Houston, TX, USA
G. BAUER, Freiburg, Germany
E. E. BAULIEU, Le Kremlin-Bicetre, France
Y. BECKER, Jerusalem, Israel
E. J. BENZ, Jr., Boston, MA, USA
J. BERGH, Stockholm, Sweden
D. D. BIGNER, Durham, NC, USA
A. BÖCKING, Düsseldorf, Germany
G. BONADONNA, Milan, Italy
F. T. BOSMAN, Lausanne, Switzerland
G. BROICH, Monza, Italy
J. M. BROWN, Stanford, CA, USA
Ø. S. BRULAND, Oslo, Norway
M. M. BURGER, Basel, Switzerland
M. CARBONE, Honolulu, HI, USA
J. CARLSSON, Uppsala, Sweden
A. F. CHAMBERS, London, ON, Canada
P. CHANDRA, Frankfurt am Main, Germany
L. CHENG, Indianapolis, IN, USA
J.-G. CHUNG, Taichung, Taiwan, ROC
E. DE CLERCQ, Leuven, Belgium
W. DE LOECKER, Leuven, Belgium
W. DEN OTTER, Amsterdam, The Netherlands
E. P. DIAMANDIS, Toronto, ON, Canada
G. TH. DIAMANDOPOULOS, Boston, MA, USA
W. EBERT, Heidelberg, Germany
D. W. FELSHER, Stanford, CA, USA
J. A. FERNANDEZ-POL, Chesterfield, MO, USA
I. J. FIDLER, Houston, TX, USA
A. P. FIELDS, Jacksonville, FL, USA
G. GABBIANI, Geneva, Switzerland
R. GANAPATHI, Charlotte, NC, USA
A. F. GAZDAR, Dallas, TX, USA
J. H. GESCHWIND, Baltimore, MD, USA
A. GIORDANO, Philadelphia, PA, USA
G. GITSCH, Freiburg, Germany
R. H. GOLDFARB, Princeton, NJ, USA
J. W. GORROD, Colchester, Essex, UK
S. HAMMARSTRÖM, Umeå, Sweden
I. HART, London, UK
I. HELLSTRÖM, Seattle, WA, USA
L. HELSON, Quakertown, PA, USA
R. B. HERBERMAN, Germantown, MD, USA
R. M. HOFFMAN, San Diego, CA, USA
C. G. IOANNIDES, Houston, TX, USA
K.-S. JEONG, Daegu, South Korea
S. C. JHANWAR, New York, NY, USA
J. V. JOHANNESSEN, Oslo, Norway
B. KAINA, Mainz, Germany
B. K. KEPPLER, Vienna, Austria
D. G. KIEBACK, Riesa (Dresden), Germany
R. KLAPDOR, Hamburg, Germany
U. R. KLEEBERG, Hamburg, Germany
P. KLEIHUES, Zürich, Switzerland
E. KLEIN, Stockholm, Sweden
S. VON KLEIST, Freiburg, Germany
S. D. KOTTARIDIS, Athens, Greece
G. R. F. KRUEGER, Köln, Germany
D. W. KUFE, Boston, MA, USA
Pat M. KUMAR, Manchester, UK
Shant KUMAR, Manchester, UK
M. KUROKI, Fukuoka, Japan
O. D. LAERUM, Bergen, Norway
F. J. LEJEUNE, Lausanne, Switzerland
L. F. LIU, Piscataway, NJ, USA
D. M. LOPEZ, Miami, FL, USA
E. LUNDGREN, Umeå, Sweden
H. T. LYNCH, Omaha, NE, USA
J. MARESCAUX, Strasbourg, France
J. MARK, Skövde, Sweden
J. F. MARSHALL, London, UK
D. MEDINA, Houston, TX, USA
S. MITRA, Galveston, TX, USA
M. MUELLER, Heidelberg, Germany
F. M. MUGGIA, New York, NY, USA
M. J. MURPHY, Jr., Dayton, OH, USA
R. NARAYANAN, Boca Raton, FL, USA
K. NILSSON, Uppsala, Sweden
J. F. NOVAK, Lewisburg, PA, USA
S. PATHAK, Houston, TX, USA
S. PESTKA, Piscataway, NJ, USA
G. J. PILKINGTON, Portsmouth, UK
C. D. PLATSOUKAS, Norfolk, VA, USA
F. PODO, Rome, Italy
A. POLLIACK, Jerusalem, Israel
M. F. RAJEWSKY, Essen, Germany
G. REBEL, Strasbourg, France
M. RIGAUD, Limoges, France
U. RINGBORG, Stockholm, Sweden
M. ROSELLI, Rome, Italy
A. SCHAUER, Göttingen, Germany
M. SCHNEIDER, Wuppertal, Germany
A. SETH, Toronto, ON, Canada
G. V. SHERBET, Newcastle-upon-Tyne, UK
G.-I. SOMA, Tokushima, Japan
G. S. STEIN, Burlington, VT, USA
T. STIGBRAND, Umeå, Sweden
D. TARIN, La Jolla, CA, USA
T. M. THEOPHANIDES, Athens, Greece
B. TOTH, Omaha, NE, USA
P. M. UELAND, Bergen, Norway
P. T. VIHKO, Oulu, Finland
R. G. VILE, Rochester, MN, USA
M. VOLM, Heidelberg, Germany
G. WEBER, Indianapolis, IN, USA
B. WESTERMARK, Uppsala, Sweden
Y. YEN, Duarte, CA, USA
B. ZUMOFF, New York, NY, USA
J. G. DELINASIOS, Athens, Greece
Managing Editor and Executive Publisher
S. AZOUDIS, Surrey, BC, Canada
Assistant Managing Editor
E. ILIADIS, Athens, Greece
Production Editor

Editorial Office: International Institute of Anticancer Research, 1st km Kapandritiou-Kalamou Rd., Kapandriti, P.O. Box 22, Attiki 19014, Greece. Tel / Fax: +30-22950-53389.

E-mails: Editorial Office: journals@iia-anticancer.org
Managing Editor: editor@iia-anticancer.org

ANTICANCER RESEARCH supports: (a) the establishment and the activities of the INTERNATIONAL INSTITUTE OF ANTICANCER RESEARCH (IAR; Kapandriti, Attiki, Greece); and (b) the organization of the International Conferences of Anticancer Research.

For more information about ANTICANCER RESEARCH, IAR and the Conferences, please visit the IAR website: www.iia-anticancer.org

Publication Data: ANTICANCER RESEARCH (AR) is published monthly from January 2009. Each annual volume comprises 12 issues. Annual Author and Subject Indices are included in the last issue of each volume. ANTICANCER RESEARCH Vol. 24 (2004) and onwards appears online with Stanford University HighWire Press from April 2009.

Copyright: On publication of a manuscript in AR, which is a copyrighted publication, the legal ownership of all published parts of the paper passes from the Author(s) to the Journal.

Annual Subscription Rates 2013 per volume: Institutional subscription Euro 1,650.00 - print or online. Personal subscription Euro 780.00 - print or online. Prices include rapid delivery and insurance. The complete previous volumes of Anticancer Research (Vol. 1-32, 1981-2012) are available at 50% discount on the above rates.

Subscription Orders: Orders can be placed at agencies, bookstores, or directly with the Publisher. Cheques should be made payable to J.G. Delinasios, Executive Publisher of Anticancer Research, Athens, Greece, and should be sent to the Editorial Office.

Advertising: All correspondence and rate requests should be addressed to the Editorial Office.

Book Reviews: Recently published books and journals should be sent to the Editorial Office. Reviews will be published within 2-4 months.

Articles in ANTICANCER RESEARCH are regularly indexed in all bibliographic services, including Current Contents (Life Sciences), Science Citation Index, Index Medicus, Biological Abstracts, PubMed, Chemical Abstracts, Excerpta Medica, University of Sheffield Biomedical Information Service, Current Clinical Cancer, AIDS Abstracts, Elsevier Bibliographic Database, EMBASE, Compendex, GEOBASE, EMBiology, Elsevier BIOBASE, FLUIDEX, World Textiles, Scopus, Progress in Palliative Care, Cambridge Scientific Abstracts, Cancergram (International Cancer Research Data Bank), MEDLINE, Reference Update - RIS Inc., PASCAL-CNRS, Inpharma-Reactions (Datastar, BRS), CABS, Immunology Abstracts, Telegen Abstracts, Genetics Abstracts, Nutrition Research Newsletter, Dairy Science Abstracts, Current Titles in Dentistry, Inpharma Weekly, BioBase, MedBase, CAB Abstracts/Global Health Databases, Investigational Drugs Database, VINITI Abstracts Journal, Leeds Medical Information, PubsHub, Sociedad Iberoamericana de Información Científica (SIIC) Data Bases.

Authorization to photocopy items for internal or personal use, or the internal or personal clients, is granted by ANTICANCER RESEARCH, provided that the base fee of \$2.00 per copy, plus 0.40 per page is paid directly to the Copyright Clearance Center, 27 Congress Street, Salem, MA 01970, USA. For those organizations that have been granted a photocopy license by CCC, a separate system of payment has been arranged. The fee code for users of the Transactional Reporting Service is 0250-7005/2013 \$2.00 +0.40.

The Editors and Publishers of ANTICANCER RESEARCH accept no responsibility for the opinions expressed by the contributors or for the content of advertisements appearing therein.

Copyright© 2013, International Institute of Anticancer Research
(Dr. John G. Delinasios), All rights reserved.
D.T.P. BY IAR
PRINTED BY ENTYP0, ATHENS, GREECE
PRINTED ON ACID-FREE PAPER

Review