Editor-in-Chief:
ARUN SETH, Sunnybrook Research Institute, University of Toronto, Toronto, ON, Canada

Managing Editor:
G.J. DELINASIOS, International Institute of Anticancer Research (IIAR), Kapandriti, Attiki, Greece

Managing Editor (2004-2016):
J.G. DELINASIOS, International Institute of Anticancer Research (IIAR), Kapandriti, Attiki, Greece

Editorial Board
L. A. Aaltosen, Helsinki, Finland
R. Abagyan, La Jolla, CA, USA
D-T. Bau, Taichung, Taiwan, ROC
R. Clarke, Washington, DC, USA
A. M. Dubuc, Boston, MA, USA
T. Effertth, Mainz, Germany
N. A. Ellis, Tucson, AZ, USA
A. Facoetti, Pavia, Italy
C.V. Forst, New York, NY, USA
G. Glinksy, San Diego, CA, USA
T.R. Golub, Cambridge, MA, USA
J. Gordon, Philadelphia, PA, USA
C.-H. Hedin, Uppsala, Sweden
J. D. Hobelis, Heidelberg, Germany
T. H. M. Huang, San Antonio, TX, USA
S. C. Jhanwar, New York, NY, USA
J. Ju, Stony Brook, NY, USA
O. P. Kallioniemi, Turku, Finland
K. Khalili, Philadelphia, PA, USA
D. G. Kiebach, Schleswig, Germany
S. D. Kottaridis, Athens, Greece
Y. T. Kwon, Seoul, Republic of Korea
B. Léyland-Jones, Rockville, MD, USA
P. Lichter, Heidelberg, Germany
A. Lindblom, Stockholm, Sweden
G. Lubec, Vienna, Austria
P. J. McCormick, Rensselaer, NY, USA
F. Mitelman, Lund, Sweden
C. Nicot, Kansas City, KS, USA
L. O’Driscoll, Dublin, Ireland
C. D. Platsoucas, Norfolk, VA, USA
J. Quackenbush, Boston, MA, USA
J. S. Rader, Milwaukee, WI, USA
R. H. Reeves, Baltimore, MD, USA
T. Ried, Bethesda, MD, USA
G. Rimbach, Kiel, Germany
K. D. Rodland, Richland, WA, USA
C. Sansom, London, UK
N. A. Saunders, Queensland, Australia
B.W. Schäfer, Zurich, Switzerland
J. Schneider, Valladolid, Spain
O. J. Semmes, Norfolk, VA, USA
G. V. Sherbet, Newcastle-upon-Tyne, UK
S. Smith, Duarte, CA, USA
J. C. Strefford, Southampton, UK
G. Tsangaris, Athens, Greece
U.H. Weidle, Penzberg, Germany
H. Zhang, New Haven, CT, USA

Editorial Office: International Institute of Anticancer Research
1st km Kapandritiou-Kalamou Rd., P.O. Box 22, Kapandriti, Attiki 19014, Greece.
Tel: +30 22950 52945, Fax: +30 22950 53389
U.S. Branch: Anticancer Research USA, Inc., 111 Bay Avenue, Highlands, NJ 07732, USA.
E-mails: journals@iiar-anticancer.org (Editorial Office)
editor@iiar-anticancer.org (Managing Editor)

www.iiar-anticancer.org
http://cgp.iiarjournals.org

Copyright © 2024, International Institute of Anticancer Research
(Dr. George J. Delinasios), All rights reserved

PHOTO COMPOSITION BY IIAR
Editorial Board

A. Seth  Editor-in-Chief
Laboratory of Molecular Pathology, Sunnybrook Research Institute, Sunnybrook Health Sciences Centre and University of Toronto, Toronto, Ontario, Canada

G.J. Delinasios  Managing Editor and Executive Publisher
International Institute of Anticancer Research, Athens, Greece

L.A. Aaltonen  Department of Medical Genetics, University of Helsinki, Helsinki, Finland

R. Abagyan  The Scripps Research Institute, La Jolla, CA, USA

D.-T. Bau  Terry Fox Cancer Research Lab, China Medical University Hospital, Taichung, Taiwan, ROC

R. Clarke  Vincent T. Lombardi Cancer Center, Georgetown University School of Medicine, Washington, DC, USA

A.M. Dubuc  Brigham and Women’s Hospital, Harvard Medical School, Boston, MA, USA

T. Effertth  Department of Pharmaceutical Biology Institute of Pharmacy and Biochemistry, University of Mainz, Mainz, Germany

N.A. Ellis  Department of Cellular and Molecular Medicine, University of Arizona Cancer Center, Tucson, AZ, USA

A. Facoetti  Fondazione CNAO, Pavia, Italy

C.V. Forst  Department of Genetics and Genomic Sciences, Institute for Genomics and Multiscale Biology, Icahn School of Medicine at Mount Sinai, New York, NY, USA

G. Glinsky  Institute of Engineering in Medicine, University of California, San Diego, CA, USA

T.R. Golub  Pediatric Oncology, Dana-Farber Cancer Institute, Cambridge, MA, USA

J. Gordon  Department of Neuroscience, Center for Neurovirology, Temple University School of Medicine, Philadelphia, PA, USA

C.-H. Heldin  Ludwig Institute for Cancer Research, Uppsala, Sweden

J.D. Hoheisel  Deutsches Krebsforschungszentrum, Genome Research and Bioinformatics, Heidelberg, Germany

T.H.M. Huang  Department of Molecular Medicine/Institute of Biotechnology, University of Texas Health Science Center at San Antonio, San Antonio, TX, USA

S.C. Jhanwar  Departments of Pathology and Medicine, Memorial Sloan Kettering Cancer Center, New York, NY, USA

J. Ju  Translational Research Laboratories, State University of New York, School of Medicine, Stony Brook, NY, USA

O.P. Kallioniemi  Medical Biotechnology Group, VTT Technical Research Centre of Finland, Turku, Finland

K. Khalili  College of Science and Technology, Center for Neurovirology and Cancer Biology, Temple University, Philadelphia, PA, USA

D.G. Kieback  Helios Medical Center Schleswig, Schleswig, Germany

S.D. Kottaridis  Department of Virology, Hellenic Anticancer Institute, Athens, Greece

Y. T. Kwon  Department of Biomedical Sciences, College of Medicine, Seoul National University, Seoul, Republic of Korea

B. Léyland-Jones  National Foundation for Cancer Research (NFCR), Rockville, MD, USA

P. Lichter  Deutsches Krebsforschungszentrum, Heidelberg, Germany

A. Lindblom  Karolinska Hospital, Department of Molecular Medicine and Surgery, Stockholm, Sweden

G. Lubec  Department of Pediatrics, University of Vienna, Austria

P.J. McCormick  The Center for Functional Genomics, Gen*NY*Sis Center for Excellence in Cancer Genomics, University of Albany, SUNY, Rensselaer, NY, USA

F. Mitelman  Department of Clinical Genetics, University Hospital, Lund, Sweden

C. Nicot  Department of Microbiology, Immunology and Molecular Genetics, University of Kansas Medical Center, Kansas City, KS, USA

L. O'Driscoll  School of Pharmacy and Pharmaceutical Sciences, Trinity College, Dublin, Ireland

C.D. Platsoucas  College of Sciences, Old Dominion University, Norfolk, VA, USA

J. Quackenbush  Department of Biostatistics and Computational Biology, Dana-Farber Cancer Institute, Boston, MA, USA

J.S. Rader  Department of Obstetrics and Gynecology, Medical College of Wisconsin, Milwaukee, WI, USA

R.H. Reeves  Department of Physiology, Johns Hopkins University, School of Medicine, Baltimore, MD, USA

T. Ried  Center for Cancer Research, Genetics Branch, NCI, NIH, Bethesda, MD, USA

G. Rimbach  Institute for Human Nutrition and Food Science, Christian-Albrechts-University, Kiel, Germany
# CANCER GENOMICS & PROTEOMICS

**Volume 21, Number 2, March-April 2024**

## Review

CircRNAs as New Therapeutic Entities and Tools for Target Identification in Acute Myeloid Leukemia. A. NOPORA, U.H. WEIDLE (Penzberg, Germany) ................................................................. 118

## Articles

Association of Androgen Receptor and PD-L1 Expression in Upper Urinary Tract Urothelial Carcinoma. Y. OKUDA, T. KATO, K. FUJITA, H. FUSHIMI, H. MIYAMOTO, G.J. NETTO, N. NONOMURA (Suita; Sayama, Osaka, Japan; Rochester, NY; Birmingham, AL, USA) ................................................................. 137

Non-homologous End-joining Genotype, mRNA Expression, and DNA Repair Capacity in Childhood Acute Lymphocytic Leukemia. C-C. CHEN, W-S. CHANG, J-S. PEI, C-C. KUO, C-H. WANG, Y-C. WANG, P-C. HSU, J-L. HE, J. GU, D-T. BAU, C-W. TSAI (Taiyuan; Taichung, Taiwan, ROC; Houston, TX, USA) .................................................. 144

POLD1 Is Required for Cell Cycle Progression by Overcoming DNA Damage in Malignant Pleural Mesothelioma. D. SHIMIZU, M. ISHIBASHI, T. YAMADA, Y. TODA, S. HOSOGI, E. ASHIHARA (Kyoto, Japan) ................. 158


Thioredoxin Reductase Inhibitor Suppresses the Local Progression of Rhabdomyosarcoma With PDX Models. H. KINOSHITA, S. KINOSHITA, H. KAMODA, Y. HAGIWARA, S. OHTORI, T. YONEMOTO (Chiba, Japan) ............ 178

PRIM2: A Marker of MYC-driven Hyper-proliferation, Disease Progression, Tumor Aggressiveness and Poor Survival in Glioma Patients. R. SUN, X. SHAO, F. AKTER, K.R. ZAHID, S. YAO, L. MA, G. XU (Guangzhou; Wuhan, PR China; Cambridge, MA; Birmingham, AL, USA) ................................................................. 186