# ANTICANCER RESEARCH

International Journal of Cancer Research and Treatment

ISSN: 0250-7005

Volume 35, Number 1, January 2015

#### **Contents**

#### Reviews

Management of Chronic Myelogenous Leukemia in Pregnancy. A. BHANDARI, K. ROLEN, B.K. SHAH (Lewiston, ID, USA)	1
Female Genital Tract Chronic Graft-versus-Host Disease: Review of the Literature. A. CIAVATTINI, N. CLEMENTE (Ancona, Italy)	13
Cytokine Networks in Animal Models of Colitis-associated Cancer. E. ANTONIOU, G.A. MARGONIS, A. ANGELOU, G.C. ZOGRAFOS, E. PIKOULIS (Athens, Greece)	19
Experimental Studies	
Class II Transactivator Expression in Melanoma Cells Facilitates T-cell Engulfment. M.C. LLOYD, K. SZEKERES, J.S. BROWN, G. BLANCK ( <i>Tampa</i> , <i>FL</i> ; <i>Chicago</i> , <i>IL</i> , <i>USA</i> )	25
The Anti-hypertensive Drug Prazosin Induces Apoptosis in the Medullary Thyroid Carcinoma Cell Line TT. R. FUCHS, G. SCHWACH, A. STRACKE, N. MEIER-ALLARD, M. ABSENGER, E. INGOLIC, H.S. HAAS, R. PFRAGNER, A. SADJAK ( <i>Graz, Austria</i> )	31
Curcumin and Epigallocatechin Gallate Inhibit the Cancer Stem Cell Phenotype <i>via</i> Down-regulation of STAT3–NFkB Signaling. S.S. CHUNG, J.V. VADGAMA ( <i>Los Angeles, CA, USA</i> )	47
Oncolytic Potential of a Novel KGFR Tyrosine Kinase Inhibitor Using a KGFR-selective Breast Cancer Xenograft Model. J.W. KESINGER, M. MEHTA, M.R. LERNER, D.J. BRACKETT, R.W. BRUEGGEMEIER, PK. LI, J.T. PENTO (Oklahoma City, OK; Columbus, OH, USA)	53

Contents continued on the back cover

## ANTICANCER RESEARCH

### International Journal of Cancer Research and Treatment

### HighWire Press STANFORD UNIVERSITY

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

#### **Editorial Board**

P.A. ABRAHAMSSON, Malmö, Sweden B. B. AGGARWAL, Houston, TX, USA T. AKIMOTO, Kashiwa, Chiba, Japan A. ARGIRIS, San Antonio, TX, USA J. P. ARMAND, Toulouse, France V. I. AVRAMIS, Los Angeles, CA, USA R. C. BAST, Houston, TX, USA D.-T. BAU, Taiwan, ROC 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 C. CARLBERG, Kuopio, Finland 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 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 B. FUCHS, Zurich, Switzerland 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, Saranac Lake, NY, USA S. HAMMARSTRÖM, Umeå, Sweden I. HELLSTRÖM, Seattle, WA, USA L. HELSON, Quakertown, PA, USA R. M. HOFFMAN, San Diego, CA, USA K.-S. JEONG, Daegu, South Korea S. C. JHANWAR, New York, NY, USA J. V. JOHANNESSEN, Oslo, Norway

P. -L. KELLOKUMPU-LEHTINEN, Tampere, Finland
B. K. KEPPLER, Vienna, Austria
D. G. KIEBACK, Marl, Germany
R. KIAPDOR, Hamburg, Germany

R. KLAPDOR, Hamburg, Germany U. R. KLEEBERG, Hamburg, Germany P. KLEIHUES, Zürich, Switzerland E. KLEIN, Stockholm, Sweden S. D. KOTTARIDIS, Athens, Greece

B. KAINA. Mainz. Germany

G. R. F. KRUEGER, Köln, Germany D. W. KUFE, Boston, MA, USA Pat M. KUMAR, Manchester, UK Shant KUMAR, Manchester, UK 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 Y. MAEHARA, Fukuoka, Japan J. MAHER, London, UK I. MARESCAUX, Strasbourg, France J. MARK, Skövde, Sweden S. MITRA, Houston, TX, USA S. MIYAMOTO, Fukuoka, Japan M. MUELLER, Villingen-Schwenningen,

F. M. MUGGIA, New York, NY, USA
M. J. MURPHY, Jr., Dayton, OH, USA
M. NAMIKI, Kanazawa, Ishikawa, Japan
R. NARAYANAN, Boca Raton, FL, USA
K. NILSSON, Uppsala, Sweden
S. PATHAK, Houston, TX, USA
J.L. PERSSON, Malmö, Sweden
S. PESTKA, Piscataway, NJ, USA
G. J. PILKINGTON, Portsmouth, UK
C. D. PLATSOUCAS, Norfolk, VA, USA
F. PODO, Rome, Italy

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

A. POLLIACK, Jerusalem, Israel

G. REBEL, Strasbourg, France

G. V. SHERBET, Newcastle-upon-Tyne, UK G.-I. SOMA, Kagawa, Japan G. S. STEIN, Burlington, VT. USA

T. STIGBRAND, Umeå, Sweden T. M. THEOPHANIDES, Athens, Greece

B. TOTH, Omaha, NE, USA
P. M. UELAND, Bergen, Norway

H. VAN VLIERBERGHE, Ghent, Belgium R. G. VILE, Rochester, MN, USA

M. WELLER, Zurich, Switzerland B. WESTERMARK, Uppsala, Sweden Y. YEN. Duarte. CA. USA

M.R.I. YOUNG, Charleston, SC, USA B. ZUMOFF, New York, NY, USA

**J. G. DELINASIOS,** Athens, Greece Managing Editor

**G. J. DELINASIOS,** Athens, Greece Assisrtant Managing Editor and Executive Publisher

**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@iiar-anticancer.org Managing Editor: editor@iiar-anticancer.org

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

For more information about ANTICANCER RESEARCH, IIAR and the Conferences, please visit the IIAR website: www.iiar-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 2015 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. 1-34, 1981-2014) 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 Biolbase, 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 Científíca (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 0250-7005/2015 \$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© 2015, International Institute of Anticancer Research (Dr. John G. Delinasios), All rights reserved. D.T.P. BY IIAR PRINTED BY ENTYPO, ATHENS, GREECE PRINTED ON ACID-FREE PAPER

## ANTICANCER RESEARCH

International Journal of Cancer Research and Treatment ISSN (print): 0250-7005, ISSN (online): 1791-7530

VOLUME 35 2015

#### **Editorial Board**

P.A. Abrahamsson Department of Urology, Skåne University Hospital, Lund University, Malmö, Sweden

B. B. Aggarwal Cytokine Research Laboratory, Department of Experimental Therapeutics, University of Texas M.D. Anderson

Cancer Center, Houston, TX, USA

T. Akimoto Division of Partical Therapy and Department of Radiation Oncology, National Cancer Center East, Kashiwa,

Chiba, Japan

A. Argiris Division of Hematology/Oncology, UT Health Science Center at San Antonio, San Antonio, TX, USA

**J. P. Armand** Institut Claudius Regaud, Toulouse, France

V. I. Avramis Division of Hematology/Oncology, Childrens Hospital, Los Angeles, CA, USA

R. C. Bast Department of Translational Research, University of Texas M.D. Anderson Cancer Center, Houston, TX, USA

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

G. Bauer Abteilung Virologie, Institut für Medizinische Mikrobiologie und Hygiene, Universität Freiburg, Germany

E. E. Baulieu INSERM U488 and College de France, Le Kremlin-Bicetre, France

Y. Becker Department of Biochemistry, Faculty of Medicine, Hebrew University of Jerusalem, Ein Kerem, Jerusalem, Israel

E. J. Benz, Jr. Dana-Farber Cancer Institute, Boston, MA, USA

J. Bergh Department of Clinical and Molecular Medicine, Radiumhemmet, Karolinska Institute, Stockholm, Sweden

**D. D. Bigner** Department of Pathology, Duke University Medical Center, Durham, NC, USA

A. Böcking Institute for Cytopathology, University of Düsseldorf, Germany
G. Bonadonna Istituto Nazionale per lo Studio e la Cura dei Tumori, Milano, Italy

**F. T. Bosman** Institute of Pathology, University of Lausanne, Switzerland

**G. Broich** Gruppo Policlinico di Monza, Monza, Italy

J. M. Brown Department of Radiation Oncology, Stanford Medical Center, Stanford, CA, USA

Ø. S. Bruland Department of Medical Oncology-Radiotherapy, Norwegian Radium Hospital, Oslo, Norway

M. M. Burger Novartis, Basel, Switzerland

M. Carbone Cancer Research Center of Hawaii, Honolulu, HI, USA

C. Carlberg Institute of Biomedicine, University of Eastern Finland, Kuopio, Finland
 J. Carlson Department of Biomedical Radiation Sciences, Uppsala University, Sweden

A. F. Chambers Department of Oncology, London Regional Cancer Center, London, Ontario, Canada

P. Chandra Abt. für Molekularbiologie, Klinikum Wolfgang Goethe-Universität, Frankfurt am Main, Germany

L. Cheng Department of Pathology, Indiana University School of Medicine, Indianapolis, IN, USA

J.-G. Chung Department of Biological Science and Technology, China Medical University, Taichung, Taiwan, ROC

E. De Clercq Rega Institute for Medical Research, Katholieke Universiteit Leuven, Belgium

W. De Loecker Department of Biochemistry, Katholieke Universiteit Leuven, Belgium

W. Den Otton

W. Den Otter VUMC, Department of Urology, Amsterdam, The Netherlands

E. P. Diamandis Department of Pathology and Laboratory Medicine, Mount Sinai Hospital, Toronto, Ontario, Canada

G. Th. Diamandopoulos Department of Pathology, Harvard Medical School, Boston, MA, USA

D.W. Felsher Division of Oncology, Stanford University School of Medicine, Stanford, CA, USA

J. A. Fernandez-Pol Metalloproteomics, LLC, Chesterfield, MO, USA

I. J. Fidler Department of Cancer Biology, University of Texas M.D. Anderson Cancer Center, Houston, TX, USA

A.P. Fields Department of Cancer Biology, College of Medicine, Mayo Clinic, Jacksonville, FL, USA

**B. Fuchs** Balgrist University Hospital, Zurich, Switzerland

**G. Gabbiani** Department of Pathology, University of Geneva, Switzerland

R. Ganapathi Levine Cancer Institute, Carolinas HealthCare System, Charlotte, NC, USA

A. F. Gazdar Hamon Center for Therapeutic Oncology Research, University of Texas Southeastern Medical Center, Dallas,

TX, USA

J.H. Geschwind Interventional Radiology Center, Johns Hopkins University School of Medicine, Baltimore, MD, USA

A. Giordano Sbarro Institute for Cancer Research, Temple University, Philadelphia, PA, USA
 G. Gitsch Department of Gynecology and Obstetrics, University of Freiburg, Germany

#### ANTICANCER RESEARCH 35: (2015)

**R. H. Goldfarb** Trudeau Institute, Saranac Lake, NY, USA

S. Hammarström Department of Immunology, University of Umeä, Sweden

I. Hellström Harborview Medical Center, Seattle, WA, USAL. Helson Sign Path Pharma, Inc., Quakertown, PA, USA

**R. M. Hoffman** Department of Surgery, University of California, San Diego, CA, USA

K.-S. Jeong
 Department of Pathology, College of Veterinary Medicine, Kyungpook National University, Daegu, South Korea
 S. C. Jhanwar
 Laboratory of Solid Tumor Genetics, Department of Medicine, Memorial Sloan-Kettering Cancer Center, New

York, NY, USA

J. V. Johannessen Department of Pathology, The Norwegian Radium Hospital, Oslo, Norway

**B. Kaina** Institute of Toxicology, University of Mainz, Germany

P.-L. Kellokumpu-Lehtinen Department of Oncology and Radiotherapy, Tampere University Hospital, Tampere, Finland

B. K. Keppler School of Medicine, University of Vienna, Austria
 D. G. Kieback Klinikum Vest, Standort Marl, Marl, Germany
 R. Klapdor Medical Clinic, University of Hamburg, Germany

U. R. Kleeberg
 Praxis Altona, Hamburg, Germany
 P. Kleihues
 Department of Pathology, University Hospital Zürich, Switzerland
 E. Klein
 Department of Tumor Biology, Karolinska Institute, Stockholm, Sweden
 S. D. Kottaridis
 Department of Virology, Hellenic Anticancer Institute, Athens, Greece

G. R. F. Krueger Center of Anatomy II, University of Cologne Medical School, Cologne, Germany

**D. W. Kufe** Division of Medicine, Dana-Farber Cancer Institute, Boston, MA, USA

Pat M. Kumar

Department of Biological Sciences, Manchester Metropolitan University, Manchester, UK

Shant Kumar

Department Pathology, University of Manchester Medical School, Manchester, UK

Department of Pathology, The Gade Institute, University of Bergen, Norway

F. J. Lejeune

Fondation du Centre Pluridisciplinaire d' Oncologie, CHUV, Lausanne, Switzerland

L. F. Liu Department of Pharmacology, UMD of New Jersey, Piscataway, NJ, USA

D. M. Lopez Department of Microbiology and Immunology, University of Miami School of Medicine, Miami, FL, USA

E. Lundgren Unit of Applied Cell and Molecular Biology, University of Umeä, Sweden

H. T. Lynch Department of Preventive Medicine and Public Health, Creighton University, Omaha, NE, USA

Y. Maehara Department of Surgery and Science, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan J. Maher Department of Research Oncology, Division of Cancer Studies, King's College London School of Medicine,

Guy's Hospital Campus, London, UK

**J. Marescaux** IRCAD, University of Strasbourg, France

**J. Mark** Department of Pathology, Kärnsjukhuset, Skövde, Sweden

S. Mitra The Methodist Hospital Research Institute (TMHRI), Houston, TX, USA

S. Miyamoto Department of Obstetrics and Gynecology, Faculty of Medicine, Fukuoka University, Fukuoka, Japan

M. Mueller Hochschule Furtwangen University, Villingen-Schwenningen, Germany
 F. M. Muggia New York University Cancer Institute, School of Medicine, NY, USA

M. J. Murphy, Jr. Hipple Cancer Research Center, Dayton, OH, USA

M. Namiki Department of Integrative Cancer Therapy and Urology, Kanazawa University Graduate School of Medical

Science, Kanazawa City, Ishikawa, Japan

R. Narayanan Department of Biological Sciences, Florida Atlantic University, Boca Raton, FL, USA

K. Nilsson Rudbeck Laboratory, Department of Genetics and Pathology, Uppsala University Hospital, Sweden

S. Pathak Department of Cell Biology, University of Texas, Houston, TX, USA

J.L. Persson Section for Experimental Cancer Research, Clinical Research Center, Lund University, Malmö, Sweden

S. Pestka Department of Molecular Genetics and Microbiology, University of Medicine and Dentistry of New Jersey,

Piscataway, NJ, USA

G. J. Pilkington Department of Cellular and Molecules Neurooncology, School of Pharmacy and Biomedical Sciences,

University of Portsmouth, UK

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

#### ANTICANCER RESEARCH 35: (2015)

**F. Podo** Laboratory of Cell Biology, Istituto Superione di Sanifa, Rome, Italy

A. Polliack Department of Haematology, Hadassah University Hospital and Medical School, Jerusalem, Israel

**G. Rebel** IRCAD, Hopitaux Universitaires, Strasbourg, France

M. Rigaud Laboratory Biochimie et Génétique Molecules, Faculté de Médecine de Limoges, France

U. Ringborg
 Department of General Oncology, Karolinska Hospital, Stockholm, Sweden
 M. Roselli
 Department of Medical Oncology, University of Rome "Tor Vergata", Italy
 A. Schauer
 Zentrum Pathologie, Georg-August Universität, Göttingen, Germany

M. Schneider Department of Organic Chemistry, Bergische University, Wuppertal, Germany

A. Seth Laboratory of Molecular Pathology, Sunnybrook Research Institute and University of Toronto, Ontario, Canada

G. V. Sherbet Cancer Research Unit, University of Newcastle-upon-Tyne, UK

G.-I. Soma Department of Integrated and Holistic Immunology, Faculty of Medicine, Kagawa University,

Kagawa, Japan

G. S. Stein Department of Biochemistry, College of Medicine, University of Vermont, Burlington, VT, USA

T. Stigbrand Department of Immunology, Umeä University, Umeä, Sweden
 T. M. Theophanides Department of Chemistry, Technical University of Athens, Greece

B. Toth The Eppley Institute for Research in Cancer and Allied Diseases, Omaha, NE, USA
 P. M. Ueland Clinical Pharmacolocy Unit, Department of Pharmacology, University of Bergen, Norway
 H. Van Vlierberghe Department of Gastroenterology and Hepatology, Ghent University Hospital, Ghent, Belgium

**R.G. Vile** Department of Immunology, Mayo Clinic, Rochester, MN, USA

M. Weller Department of Neurology, University Hospital Zurich, Zurich, Switzerland

B. Westermark Rudbecklaboratoriet, Department of Genetics and Pathology, University of Uppsala, Sweden

Y. Yen Department of Molecular Pharmacology, City of Hope, Duarte, CA, USA

M.R.I. Young
 Ralph H. Johnson VA Medical Center, Medical University of South Carolina, Charleston, SC, USA
 B. Zumoff
 Division of Endocrinology and Metabolism, Beth Israel Medical Center, New York, NY, USA

#### **Instructions to Authors 2015**

General Policy. ANTICANCER RESEARCH (AR) will accept original high quality works and reviews on all aspects of experimental and clinical cancer research. The Editorial Policy suggests that priority will be given to papers advancing the understanding of cancer causation, and to papers applying the results of basic research to cancer diagnosis, prognosis, and therapy. AR will also accept the following for publication: (a) Abstracts and Proceedings of scientific meetings on cancer, following consideration and approval by the Editorial Board; (b) Announcements of meetings related to cancer research; (c) Short reviews (of approximately 120 words) and announcements of newly received books and journals related to cancer, and (d) Announcements of awards and prizes.

The principal aim of AR is to provide prompt publication (print and online) for original works of high quality, generally within 1-2 months from final acceptance. Manuscripts will be accepted on the understanding that they report original unpublished works on the cancer problem that are not under consideration for publication by another journal, and that they will not be published again in the same form. All authors should sign a submission letter confirming the approval of their article contents. All material submitted to AR will be subject to review, when appropriate, by two members of the Editorial Board and by one suitable outside referee. The Editors reserve the right to improve manuscripts on grammar and style.

The Editors and Publishers of AR accept no responsibility for the contents and opinions expressed by the contributors. Authors should warrantee due diligence in the creation and issuance of their work.

NIH Open Access Policy. The journal acknowledges that authors of NIH funded research retain the right to provide a copy of the final manuscript to the NIH four months after publication in ANTICANCER RESEARCH, for public archiving in PubMed Central.

Copyright. Once a manuscript has been published in ANTICANCER RESEARCH, which is a copyrighted publication, the legal ownership of all published parts of the paper has been transferred from the Author(s) to the journal. Material published in the journal may not be reproduced or published elsewhere without the written consent of the Managing Editor or Publisher.

Format. Two types of papers may be submitted: (i) Full papers containing completed original work, and (ii) review articles concerning fields of recognisable progress. Papers should contain all essential data in order to make the presentation clear. Reasonable economy should be exercised with respect to the number of tables and illustrations used. Papers should be written in clear, concise English. Spelling should follow that given in the "Shorter Oxford English Dictionary".

*Manuscripts*. Submitted manuscripts should not exceed fourteen (14) pages (approximately 250 words per double - spaced typed page), including abstract, text, tables, figures, and references (corresponding to 4 printed pages). Papers exceeding four printed pages will be subject to excess page charges. All manuscripts should be divided into the following sections:

(a) First page including the title of the presented work [not exceeding fifteen (15) words], full names and full postal addresses of all Authors, name of the Author to whom proofs are to be sent, key words, an abbreviated running title, an indication "review", "clinical", "epidemiological", or "experimental" study, and the date of submission. (Note: The order of the Authors is not necessarily indicative of their contribution to the work. Authors may note their individual contribution(s) in the appropriate section(s) of the presented work); (b) Abstract not exceeding 150 words, organized according to the following headings: Background/Aim - Materials and Methods/Patients and Methods - Results - Conclusion; (c) Introduction; (d) Materials and Methods/Patients and Methods; (e) Results; (f) Discussion; (g) Acknowledgements; (h) References. All pages must be numbered consecutively. Footnotes should be avoided. Review articles may follow a different style according to the subject matter and the Author's opinion. Review articles should not exceed 35 pages (approximately 250 words per double-spaced typed page) including all tables, figures, and references.

Figures. All figures (whether photographs or graphs) should be clear, high contrast, at the size they are to appear in the journal: 8.00 cm (3.15 in.) wide for a single column; 17.00 cm (6.70 in.) for a double column; maximum height: 20.00 cm (7.87 in.). Graphs must be submitted as photographs made from drawings and must not require any artwork, typesetting, or size modifications. Symbols, numbering and lettering should be clearly legible. The number and top of each figure must be indicated. Colour plates are charged.

Tables. Tables should be typed double-spaced on a separate page, numbered with Roman numerals and should include a short title.

References. Authors must assume responsibility for the accuracy of the references used. Citations for the reference sections of submitted works should follow the standard form of "Index Medicus" and must be numbered consecutively. In the text, references should be cited by number. Examples: 1 Sumner AT: The nature of chromosome bands and their significance for cancer research. Anticancer Res 1: 205-216, 1981. 2 McGuire WL and Chamnes GC: Studies on the oestrogen receptor in breast cancer. In: Receptors for Reproductive Hormones (O' Malley BW, Chamnes GC (eds.). New York, Plenum Publ Corp., pp 113-136, 1973.

Nomenclature and Abbreviations. Nomenclature should follow that given in "Chemical Abstracts", "Index Medicus", "Merck Index", "IUPAC –IUB", "Bergey's Manual of Determinative Bacteriology", The CBE Manual for Authors, Editors and Publishers (6th edition, 1994), and MIAME Standard for Microarray Data. Human gene symbols may be obtained from the HUGO Gene Nomenclature Committee (HGNC) (http://www.gene.ucl.ac.uk/). Approved mouse nomenclature may be obtained from http://www.informatics.jax.org/. Standard abbreviations are preferable. If a new abbreviation is used, it must be defined on first usage.

Clinical Trials. Authors of manuscripts describing clinical trials should provide the appropriate clinical trial number in the correct format in the text.

For International Standard Randomised Controlled Trials (ISRCTN) Registry (a not-for-profit organization whose registry is administered by Current Controlled Trials Ltd.) the unique number must be provided in this format: ISRCTNXXXXXXXX (where XXXXXXXX represents the unique number, always prefixed by "ISRCTN"). Please note that there is no space between the prefix "ISRCTN" and the number. Example: ISRCTN47956475.

For Clinicaltrials.gov registered trials, the unique number must be provided in this format: NCTXXXXXXXX (where XXXXXXXX represents the unique number, always prefixed by 'NCT'). Please note that there is no space between the prefix 'NCT' and the number. Example: NCT00001789.

Ethical Policies and Standards. ANTICANCER RESEARCH agrees with and follows the "Uniform Requirements for Manuscripts Submitted to Biomedical Journals" established by the International Committee of Medical Journal Editors in 1978 and updated in October 2001 (www.icmje.org). Microarray data analysis should comply with the "Minimum Information About Microarray Experiments (MIAME) standard". Specific guidelines are provided at the "Microarray Gene Expression Data Society" (MGED) website. Presentation of genome sequences should follow the guidelines of the NHGRI Policy on Release of Human Genomic Sequence Data. Research involving human beings must adhere to the principles of the Declaration of Helsinki and Title 45, U.S. Code of Federal Regulations, Part 46, Protection of Human Subjects, effective December 13, 2001. Research involving animals must adhere to the Guiding Principles in the Care and Use of Animals approved by the Council of the American Physiological Society. The use of animals in biomedical research should be under the careful supervision of a person adequately trained in this field and the animals must be treated humanely at all times. Research involving the use of human foetuses, foetal tissue, embryos and embryonic cells should adhere to the U.S. Public Law 103-41, effective December 13, 2001.

Submission of Manuscripts. Please follow the Instructions to Authors regarding the format of your manuscript and references. There are 3 ways to submit your article (NOTE: Please use only one of the 3 options. Do not send your article twice.):

- 1. To submit your article online please visit: IIAR-Submissions (http://www.iiar-anticancer.org/submissions/login.php)
- 2. You can send your article via e-mail to journals@iiar-anticancer.org. Please remember to always indicate the name of the journal you wish to submit your paper. The text should be sent as a Word document (\*doc) attachment. Tables, figures and cover letter can also be sent as e-mail attachments.
- 3. You can send the manuscript of your article via regular mail in a USB stick, DVD, CD or floppy disk (including text, tables and figures) together with three hard copies to the following address:

John G. Delinasios

International Institute of Anticancer Research (IIAR)

Editorial Office of ANTICANCER RESEARCH,

IN VIVO, CANCER GENOMICS and PROTEOMICS.

1st km Kapandritiou-Kalamou Road

P.O. Box 22, GR-19014 Kapandriti, Attiki

GREECE

Submitted articles will not be returned to Authors upon rejection.

Galley Proofs. Unless otherwise indicated, galley proofs will be sent to the first-named Author of the submission. Corrections of galley proofs should be limited to typographical errors. Reprints, PDF files, and/or Open Access may be ordered after the acceptance of the paper. Requests should be addressed to the Editorial Office.

Copyright© 2015 - International Institute of Anticancer Research (J.G. Delinasios). All rights reserved (including those of translation into other languages). No part of this journal may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission from the Publisher.

