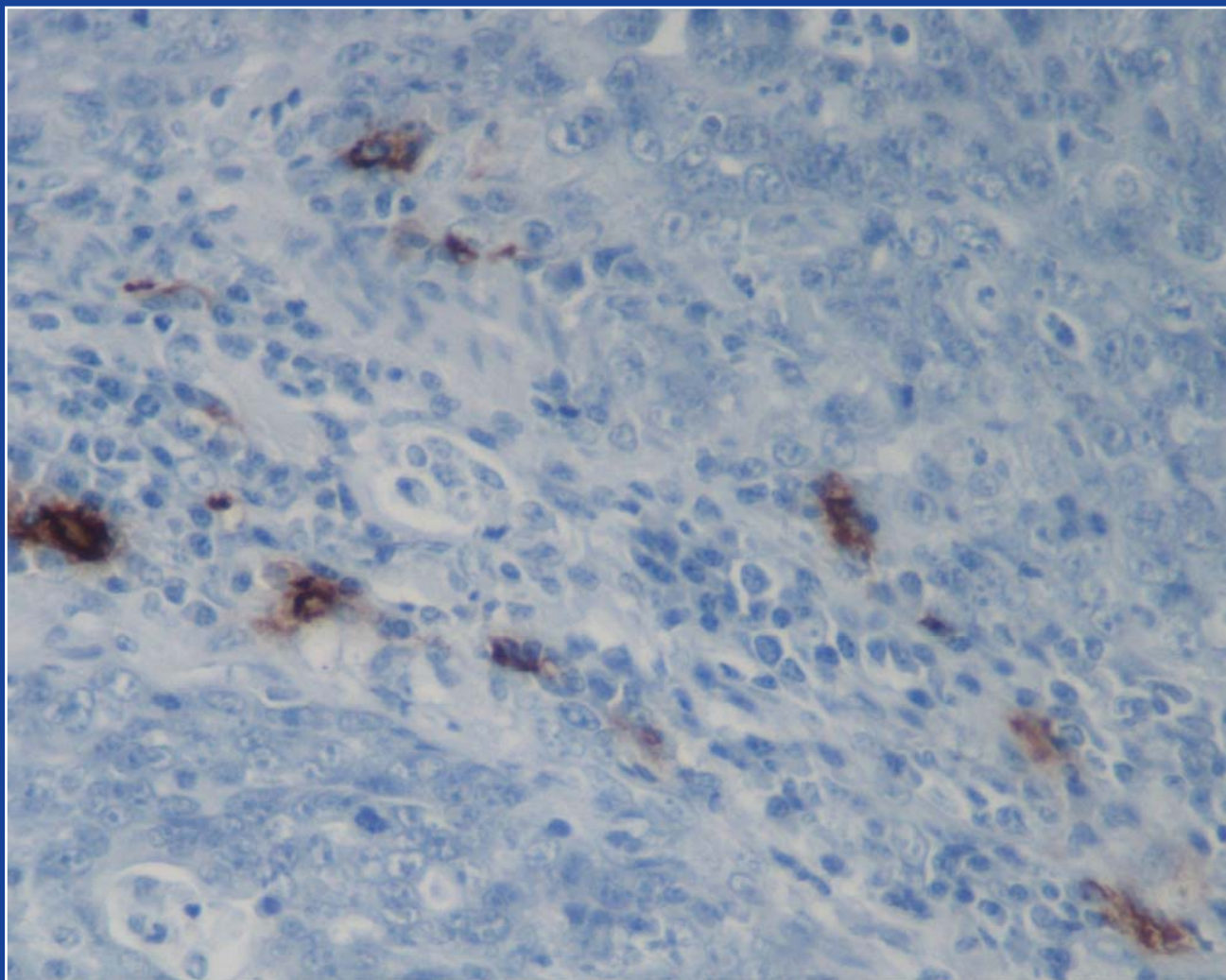


# CANCER GENOMICS & PROTEOMICS

Volume 7, Number 1, January-February 2010

ISSN (print): 1109-6535; ISSN (online): 1790-6245



Published by the International Institute of Anticancer Research

# CANCER GENOMICS & PROTEOMICS

Print ISSN: 1109-6535, Online ISSN: 1790-6245

## Editor-in-Chief:

**ARUN SETH**, *Sunnybrook Research Institute, University of Toronto, Toronto, ON, Canada*

## Managing Editor:

**J.G. DELINASSIOS**, *International Institute of Anticancer Research (IIAR), Kapandriti, Attiki, Greece*

## Editorial Board

**L. A. Aaltonen**, *Helsinki, Finland*  
**R. Abagyan**, *La Jolla, CA, USA*  
**F. Ahmed**, *Greenville, NC, USA*  
**S. Antonarakis**, *Geneva, Switzerland*  
**D.-T. Bau**, *Taiwan, ROC*  
**A. M. Burger**, *Detroit, MI, USA*  
**M. R. Chance**, *Cleveland, OH, USA*  
**A. M. Chinnaiyan**, *Ann Arbor, MI, USA*  
**B. F. C. Clark**, *Aarhus, Denmark*  
**R. Clarke**, *Washington, DC, USA*  
**N. E. Davidson**, *Pittsburgh, PA, USA*  
**I. Dunham**, *Cambridge, UK*  
**T. Efferth**, *Heidelberg, Germany*  
**J. A. Fernandez-Pol**, *Chesterfield, MO, USA*  
**C.V. Forst**, *Los Alamos, NM, USA*  
**M. Fountoulakis**, *Basel, Switzerland*  
**D. S. Gerhard**, *Bethesda, MD, USA*  
**J. W. Gray**, *San Francisco, CA, USA*  
**B. B. Haab**, *Grand Rapids, MI, USA*  
**C.-H. Heldin**, *Uppsala, Sweden*  
**J. D. Hoheisel**, *Heidelberg, Germany*  
**R. P. Huang**, *Atlanta, GA, USA*  
**T. H. M. Huang**, *Columbus, OH, USA*  
**S. C. Jhanwar**, *New York, NY, USA*  
**V. C. Jordan**, *Chicago, IL, USA*  
**J. Ju**, *Stony Brook, NY, USA*  
**A. Kallioniemi**, *Tampere, Finland*  
**O. P. Kallioniemi**, *Turku, Finland*  
**K. Khalili**, *Philadelphia, PA, USA*  
**D. G. Kieback**, *Dresden, Germany*  
**S. D. Kottaridis**, *Athens, Greece*  
**B. Léylard-Jones**, *Montreal, QC, Canada*  
**P. Lichter**, *Heidelberg, Germany*  
**A. Lindblom**, *Stockholm, Sweden*  
**G. Lubec**, *Vienna, Austria*  
**J. Lyons-Weiler**, *Pittsburgh, PA, USA*

**P. J. McCormick**, *Rensselaer, NY, USA*  
**J. D. Minna**, *Dallas, TX, USA*  
**F. Mitelman**, *Lund, Sweden*  
**P. Nelson**, *Seattle, WA, USA*  
**C. Nicot**, *Kansas City, KS, USA*  
**L. O'Driscoll**, *Dublin, Ireland*  
**I. Pastan**, *Bethesda, MD, USA*  
**C. D. Platsoucas**, *Philadelphia, PA, USA*  
**J. Quackenbush**, *Boston, MA, USA*  
**J. S. Rader**, *Milwaukee, WI, USA*  
**A. Raouf**, *Winnipeg, MB, Canada*  
**G. Rasty**, *Toronto, ON, Canada*  
**G. Rechavi**, *Tel-Hashomer, Israel*  
**R. H. Reeves**, *Baltimore, MD, USA*  
**K. L. Reichelt**, *Oslo, Norway*  
**T. Ried**, *Bethesda, MD, USA*  
**G. Rimbach**, *Kiel, Germany*  
**K. D. Rodland**, *Richland, WA, USA*  
**Y. Sakaki**, *Yokohama, Japan*  
**C. Sansom**, *London, UK*  
**N. A. Saunders**, *Queensland, Australia*  
**J. Schneider**, *Madrid, Spain*  
**O. J. Semmes**, *Norfolk, VA, USA*  
**G. V. Sherbet**, *Newcastle-upon-Tyne, UK*  
**K. K. Singh**, *Buffalo, NY, USA*  
**S. Smith**, *Duarte, CA, USA*  
**J. C. Stretford**, *Southampton, UK*  
**J. M. Trent**, *Phoenix, AZ, USA*  
**G. Tsangaris**, *Athens, Greece*  
**L.-C. Tsui**, *Toronto, ON, Canada*  
**G. F. Vande Woude**, *Grand Rapids, MI, USA*  
**D. K. Watson**, *Charleston, SC, USA*  
**K. Williams**, *New Haven, CT, USA*  
**A. T. Yeung**, *Philadelphia, PA, USA*  
**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  
E-mails:  
journals@iiar-anticancer.org (Editorial Office)  
editor@iiar-anticancer.org (Managing Editor)  
www.iiar-anticancer.org

PRINTED ON ACID-FREE PAPER

Front cover photograph: Figure 2, page 28, this issue.

**Editorial Policy.** CANCER GENOMICS & PROTEOMICS (CGP) welcomes the submission of high quality original articles and reviews on all aspects of the application of genomic and proteomic technologies to experimental and clinical cancer research. The Journal's scientific spectrum includes: (a) molecular causes of carcinogenesis, cancer progression and metastasis; (b) structural and functional aspects of genes in the cancer cell; (c) advances in genomic and proteomic technologies applicable to cancer research; (d) anticancer drug design and drug development.

CGP will also accept abstracts and proceedings of scientific meetings for publication, following consideration and approval by the Editorial Board.

A main aim of CGP is to ensure the prompt and confidential review, and rapid publication of original works and reviews, generally within 2-4 months from submission or 1-2 months from acceptance.

For more information about CANCER GENOMICS & PROTEOMICS, IIAR and the Conferences, please visit the IIAR website: [www.iiar-anticancer.org](http://www.iiar-anticancer.org)

**Publication Data:** CANCER GENOMICS & PROTEOMICS (CGP) is published bimonthly. Each annual volume comprises six issues. Annual Author and Subject Indexes are included in the sixth issue of each volume. CANCER GENOMICS & PROTEOMICS Vol. 1 (2004) and onwards appears online with Stanford University HighWire Press.

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

Manuscripts, correspondence, requests for sample copies and orders should be addressed to: Dr. John G. Delinassios, Managing Editor, Editorial Office, Cancer Genomics & Proteomics, 1st km Kapandritiou-Kalamou Rd., P.O. Box 22, Kapandriti, Attiki 19014, Greece. Tel: +30 22950 52945, Fax: +30 22950 53389, e-mail: [editor@iiar-anticancer.org](mailto:editor@iiar-anticancer.org)

Manuscripts from North America may be sent to the Editor-in-Chief, Prof. A. Seth, CGP, Laboratory of Molecular Pathology, Sunnybrook Research Institute, University of Toronto, 2075 Bayview Avenue, Room S112a, Toronto, ON, Canada M4N 3M5. Fax: 416 480 5737. E-mail: [genomics.proteomics@utoronto.ca](mailto:genomics.proteomics@utoronto.ca)

**Annual Subscription (print & online) Rates 2010:** Institutional subscription, Euro 800.00 - online, print or print & online; Personal subscription, Euro 400.00 - online, print or print & online; Prices include rapid delivery and insurance.

**Subscription Orders:** Orders can be placed at agencies, bookstores, or directly with the Publisher. Cheques should be made payable to J.G. Delinassios, Managing Editor, 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.

The Editors and Publishers of CANCER GENOMICS & PROTEOMICS accept no responsibility for the opinions expressed by the contributors or for the content of advertisements appearing therein.

Copyright© 2010, International Institute of Anticancer Research (Dr. John G. Delinassios), All rights reserved

PHOTOCOMPOSITION BY IIAR  
PRINTED BY ENTYP0, ATHENS, GREECE

# CANCER GENOMICS & PROTEOMICS

Print ISSN: 1109-6535  
Online ISSN: 1790-6245

VOLUME 7, No 1  
2010

## 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
- J.G. Delinassios** Managing Editor and Executive Publisher,  
International Institute of Anticancer Research, Athens, Greece
- L.A. Aaltonen** Department of Medical Genetics, University of Helsinki, Finland  
**R. Abagyan** The Scripps Research Institute, La Jolla, CA, USA  
**F. Ahmed** Department of Radiation Oncology, East Carolina University School of Medicine, Greenville, NC, USA  
**S. Antonarakis** Division of Medical Genetics, University of Geneva Medical School, Switzerland  
**D.-T. Bau** Terry Fox Cancer Research Lab, China Medical University Hospital, Taichung, Taiwan  
**A.M. Burger** Barbara Ann Karmanos Cancer Institute, Wayne State University, Detroit, MI, USA  
**M.R. Chance** Case Western Reserve University, Center for Proteomics and Bioinformatics, Cleveland, OH, USA  
**A.M. Chinnaiyan** Department of Pathology, University of Michigan Medical School, Ann Arbor, MI, USA  
**B.F.C. Clark** Department of Molecular Biology, University of Aarhus, Denmark  
**R. Clarke** Vincent T. Lombardi Cancer Center, Georgetown University School of Medicine, Washington, DC, USA  
**N. E. Davidson** University of Pittsburgh, Cancer Institute, Pittsburgh, PA, USA  
**I. Dunham** The Wellcome Trust Sanger Centre, Wellcome Trust Genome Campus, Cambridge, UK  
**T. Efferth** German Cancer Research Center, Pharmaceutical Biology, Heidelberg, Germany  
**J.A. Fernandes-Pol** Metalloproteomics, LLC, Chesterfield, MO, USA  
**C.V. Forst** McClintock Resource, Bioscience Division, Los Alamos National Laboratory, NM, USA  
**M. Fountoulakis** F. Hoffman-La Roche Pharmaceutical Research, Basel, Switzerland  
**D.S. Gerhard** NIH / NCI, Office of Cancer Genomics, Bethesda, MD, USA  
**J.W. Gray** Cancer Genetics Program, Comprehensive Cancer Center, University of California San Francisco, CA, USA  
**B.B. Haab** Van Andel Research Institute, Grand Rapids, MI, USA  
**C.-H. Heldin** Ludwig Institute for Cancer Research, Uppsala, Sweden  
**J.D. Hoheisel** Deutsches Krebsforschungszentrum, Genome Research and Bioinformatics, Heidelberg, Germany  
**R.P. Huang** Department of Gynecology and Obstetrics, Emory University School of Medicine, Atlanta, GA, USA  
**T.H.M. Huang** Comprehensive Cancer Center, Human Cancer Genetics Program, Ohio State University, Columbus, OH, USA  
**S.C. Jhanwar** Departments of Pathology and Medicine, Memorial Sloan Kettering Cancer Center, New York, NY, USA  
**V.C. Jordan** Fox Chase Cancer Center, Philadelphia, PA, USA  
**J. Ju** Translational Research Laboratories, State University of New York, School of Medicine, Stony Brook, NY, USA  
**A. Kallioniemi** Laboratory of Cancer Genetics, Institute of Medical Technology, Tampere University Hospital, Finland  
**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** DIAKO, Ev. Diakonie-Hospital, Bremen, Germany  
**S.D. Kottaridis** Department of Virology, Hellenic Anticancer Institute, Athens, Greece  
**B. Léylund-Jones** Winship Cancer Center, Emory University School of Medicine, Atlanta, GA, 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  
**J. Lyons-Weiler** Department of Pathology, Center for Oncology Informatics, University of Pittsburgh, PA, USA  
**P.J. McCormick** The Center for Functional Genomics, Gen\*NY\*Sis Center for Excellence in Cancer Genomics, University of Albany, SUNY, Rensselaer, NY, USA
- J.D. Minna** Hamon Center for Therapeutic Oncology, University of Texas, Southwestern Medical Center at Dallas, TX, USA  
**F. Mitelman** Department of Clinical Genetics, University Hospital, Lund, Sweden  
**P. Nelson** Fred Hutchinson Cancer Research Center, Seattle, WA, USA  
**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  
**I. Pastan** Laboratory of Molecular Biology, NCI, NIH, Bethesda, MD, USA

<b>C.D. Platsoucas</b>	College of Sciences, Old Dominion University, Norfolk, VA, USA
<b>J. Quackenbush</b>	Department of Biostatistics and Computational Biology, Dana-Farber Cancer Institute, Boston, MA, USA
<b>J.S. Rader</b>	Department of Obstetrics and Gynecology, Medical College of Wisconsin, Milwaukee, WI, USA
<b>A. Raouf</b>	Department of Immunology, University of Manitoba, Manitoba Institute of Cell Biology (MICB), Winnipeg, MB, Canada
<b>G. Rasty</b>	Department of Anatomic Pathology, University Health Network, University of Toronto, Toronto, ON, Canada
<b>G. Rechavi</b>	Pediatric Hemato-Oncology Department, Sheba Medical Center, Tel-Hashomer, Israel
<b>R.H. Reeves</b>	Department of Physiology, Johns Hopkins University, School of Medicine, Baltimore, MD, USA
<b>K.L. Reichelt</b>	Institute of Pediatric Research, The National Hospital, University of Oslo, Norway
<b>T. Ried</b>	Center for Cancer Research, Genetics Branch, NCI, NIH, Bethesda, MD, USA
<b>G. Rimbach</b>	Institute for Human Nutrition and Food Science, Christian-Albrechts-University, Kiel, Germany
<b>K.D. Rodland</b>	Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, USA
<b>Y. Sakaki</b>	Human Genome Research Group, RIKEN Genomic Sciences Center, Yokohama, Japan
<b>C. Sansom</b>	The School of Crystallography, Birbeck College, University of London, UK
<b>N.A. Saunders</b>	Centre for Immunology and Cancer Research, Princess Alexandra Hospital, University of Queensland, Australia
<b>J. Schneider</b>	Universidad Rey Juan Carlos, Facultad de Ciencias de la Salud, Alcorcón (Madrid), Spain
<b>O.J. Semmes</b>	Department of Microbiology and Molecular Cell Biology, Eastern Virginia Medical School, Norfolk, VA, USA
<b>G.V. Sherbet</b>	University of Newcastle, Merz Court, Department of Electrical and Electronic Engineering, Newcastle-upon-Tyne, UK
<b>K.K. Singh</b>	Department of Cancer Genetics, Roswell Park Cancer Institute, Buffalo, NY, USA
<b>S. Smith</b>	City of Hope Cancer Center, Department of Cell and Tumor Biology, Duarte, CA, USA
<b>J.C. Strefford</b>	Cancer Science Division, Southampton General Hospital, Southampton, UK
<b>J.M. Trent</b>	Tgen, Phoenix, AZ, USA
<b>G. Tsangaris</b>	Foundation of Biomedical Research of the Academy of Athens, Central Unit of Genomics-Proteomics, Athens, Greece
<b>L.-C. Tsui</b>	The Hospital for Sick Children, University of Toronto, ON, Canada
<b>G.F. Vande Woude</b>	Laboratory of Molecular Oncology, Van Andel Institute, Grand Rapids, MI, USA
<b>D.K. Watson</b>	Department of Biochemistry and Molecular Biology, Hollings Cancer Center, Medical University of South Carolina, Charleston, SC, USA
<b>K. Williams</b>	Keck Laboratory, Department of Molecular Biophysics and Biochemistry, New Haven, CT, USA
<b>A.T. Yeung</b>	Fox Chase Cancer Center, Philadelphia, PA, USA
<b>H. Zhang</b>	Department of Epidemiology and Public Health, Yale University School of Medicine, New Haven, CT, USA

Articles in CANCER GENOMICS & PROTEOMICS are regularly indexed in the following bibliographic services: PUBMED, MEDLINE, CAS (Chemical Abstracts Service); BIOLOGICAL ABSTRACTS; EMBASE and BIOBASE, Compendex, GEOBASE, EMBiology, FLUIDEX, Scopus (Elsevier Bibliographic Databases); BIOSIS PREVIEWS; LEEDS MEDICAL INFORMATION; CSA ILLUMINA (Cambridge Scientific Abstracts, including: Oncogenes & Growth Factors, Genetics, Medical & Pharmaceutical Biotechnology, Bioengineering); All-Russian Institute of Scientific and Technical Information – VINITI Abstracts Journal, PubsHub, Sociedad Iberoamericana de Información Científica (SIIC) Data Bases.

**Editorial Office:**

International Institute of Anticancer Research  
 1st km Kapandritiou-Kalamou Road,  
 P.O. Box 22, Kapandriti, Attiki, 19014, Greece.  
 Tel: +30 22950 52945, Fax: +30 22950 53389  
 e-mail: journals@iiar-anticancer.org. Website: www.iiar-anticancer.org

Manuscripts, correspondence, requests for sample copies and orders should be addressed to: Dr. John G. Delinassios, Managing Editor, Editorial Office, Cancer Genomics & Proteomics, 1st km Kapandritiou-Kalamou Road, P.O. Box 22, Kapandriti, Attiki, 19014, Greece. Tel: +30 22950 52945, Fax: +30 22950 53389, e-mail: editor@iiar-anticancer.org

Manuscripts from North America may be sent to the Editor-in-Chief, Prof. A. Seth, CGP, Laboratory of Molecular Pathology, Sunnybrook Research Institute, 2075 Bayview Avenue, Room S112a, Toronto, ON, Canada M4N 3M5. Fax: +1 416 480 5737, e-mail: genomics.proteomics@utoronto.ca

# CANCER GENOMICS & PROTEOMICS

Volume 7, Number 1, January-February 2010

## Contents

Molecular Profiling Using Tissue Microarrays as a Tool to Identify Predictive Biomarkers in Laryngeal Cancer Treated with Radiotherapy. G. HOLGERSSON, S. EKMAN, J. REIZENSTEIN, M. BERGQVIST, F. PONTÉN, M. UHLÉN, K. MAGNUSSON, P. JONNALAGADDA, A. ASPLUND, S. STRÖMBERG, A. LINDER, E. BLOMQUIST, M. LILJEHOLM, B. LÖDÉN, K. HELLSTRÖM, S. BERGSTRÖM ( <i>Uppsala; Örebro; Gävle; Karlstad; Stockholm; Sweden; Mumbai, India</i> ) .....	1
DNA-Based Assay for EPHB6 Expression in Breast Carcinoma Cells as a Potential Diagnostic Test for Detecting Tumor Cells in Circulation. B.P. FOX, R.P. KANDPAL ( <i>Pomona, CA, USA</i> ) .....	9
Identification of Melanoma Antigens Using a Serological Proteome Approach (SERPA). A. SUZUKI, A. IIZUKA, M. KOMIYAMA, M. TAKIKAWA, A. KUME, S. TAI, C. OHSHITA, A. KURUSU, Y. NAKAMURA, A. YAMAMOTO, N. YAMAZAKI, S. YOSHIKAWA, Y. KIYOHARA, Y. AKIYAMA ( <i>Shizuoka; Tokyo; Saitama, Japan</i> ) .....	17
Mast Cells in Squamous Cell Esophageal Carcinoma and Clinical Parameters. B. TINGE, D. MOLIN, M. BERGQVIST, S. EKMAN, S. BERGSTRÖM ( <i>Uppsala, Sweden</i> ) .....	25
* Review: Genetic Basis and Gene Therapy Trials for Thyroid Cancer. HUSSAM AL-HUMADI, APOSTOLOS ZARROS, RAFAL AL-SAIGH and CHARIS LIAPI ( <i>Athens, Greece</i> ) .....	31
* Review (page 31)	

## Instructions to Authors

*General Policy.* CANCER GENOMICS & PROTEOMICS (CGP) welcomes the submission of original high quality articles and reviews on the application of genomic and proteomic technology to experimental and clinical cancer research. The journal's topical spectrum includes: (a) Molecular causes of carcinogenesis, cancer progression and metastasis; (b) Structural and functional aspects of genes in the cancer cell; (c) Advances in genomic and proteomic technologies applicable to cancer research; (d) Rational anticancer drug design and drug development.

CGP will also accept abstracts and proceedings of scientific meetings for publication, following consideration and approval by the Editorial Board.

The principal aim of CGP is to provide for the prompt publication of original works of high quality, generally within 1-2 months of final acceptance. Manuscripts will be accepted with the understanding that they report original unpublished works that are not under consideration for publication by another journal, and that they will not be published again in the same form. All material submitted to CGP will be subject to review by two members of the Editorial Board and by one suitable outside referee. All manuscripts submitted to CGP are treated in confidence, without access to any person other than the Editor-in-Chief, the Managing Editor, the journal's secretary, the reviewers and the printers. The Editors reserve the right to improve manuscripts on grammar and style. The Editors and Publishers of CGP accept no responsibility for the contents and opinions expressed by the contributors. Authors should warrant 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 CGP, for public archiving in PubMed Central.

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

*Format.* Two types of papers may be submitted: (i) Full papers containing completed original work, and (ii) short papers. Additionally, the Editors may invite 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 "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, glossy prints of 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 on the reverse side. Original karyotypes and photographs should be provided wherever possible, and not photographic copies. Colour plates are charged.

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

*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), MIAME Standard for Microarray Data. Human gene symbols may be obtained from 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 will be preferable. If a new abbreviation is used it must be defined at its first usage.

*References.* 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 and Chamnes GC (eds.). New York, Plenum Publ Corp., pp 113-136, 1973.

*Ethical Policies and Standards.* CGP 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 October 2001 ([www.icmje.org](http://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 at all times the animals must be treated humanely. Research involving the use of human fetuses, fetal tissue, embryos and embryonic cells should adhere to the U.S. Public Law 103-41, effective December 13, 2001.

*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.

*Submission of Manuscripts.* 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 below options - Do not send your articles twice):

1. To submit your article online please visit: IAR-Submissions (<http://www.iar-anticancer.org/submissions/login.php>)
2. You can send your article via e-mail to [journals@iar-anticancer.org](mailto:journals@iar-anticancer.org) ([journals@iar-anticancer.org](mailto:journals@iar-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) link to 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 of your manuscript to the following address:  
John G. Delinassios, International Institute of Anticancer Research (IAR), Editorial Office of ANTICANCER RESEARCH, IN VIVO, and CANCER GENOMICS & 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.* Twenty-five copies of each communication will be provided free-of-charge. Additional copies or PDF files may be ordered after the acceptance of the paper. Requests for additional reprints and PDF files should be addressed to the Editorial Office.

Copyright© 2010, International Institute of Anticancer Research (Dr. John G. Delinassios). 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.