Journal of Oncology

Special Issue on

Immunoepigenetics: A Future Sentinel for Tumor Directed Therapies

CALL FOR PAPERS

The special issue would discuss one of the key problems in the field of cancer biology and therapy which is the epigenetic modification of host factors by both genetic and environmental factors which are known to influence immune response particularly in tumor disease. This is due to epigenetic changes in the host which affect the differentiation and function of immune cells negatively. Changes in the gut microbiota, accumulation of several xenobiotics like antibiotics, chemotherapeutic drugs, and use of radiation altogether contribute to DNA damage and various somatic and germline mutations. Changes in the expression, splicing and rearrangement of various genes, and translation of peptide with altered amino acid sequences and functions contribute to autoimmunity. Such epigenetic modification(s) in the genes encoding for immune response, which are quite susceptible of these changes, often predispose immune system incapable of combating tumors. Pathogen derived factors (live viral particles) in case of virotherapy and excessive use of TLR ligands (TLR mimicry) sometimes contribute to change in the expression of key pathways like IRF, STAT, TGF, TLRs, and HLA genes which are paramount for proper functioning of immune system. Epigenetic changes in these pathways largely contribute to the treatment failure.

Increased frequencies of peripheral HLA haplotypes and TLR with unknown sequences (TLR polymorphism) are few examples of epigenetic changes which contribute to graft rejection and ADCC and are believed to impart resistance in variety of tumors against various therapies (radio/chemotherapy). This is reflected in gradual decease in disease-free survival of cancer patients even after successful and tissue matched bone marrow transplant. Recent studies have indicated the influence of the epigenetic changes in the gene coding for CD40-40L, CD80, CD86, and ICAM-1 antigens and death-inducing receptors (like PD-1) and their inability to activate immune system and tumor control. Therefore, a stringent control of epigenetic changes in the host by use of drugs targeting DNA methyltransferase and HDAC and/or by use of probiotics along with current regimen is believed to hold potential for boosting host immune response for eradicating tumors efficiently. Therefore, the major aim and scope of this special issue are to both discuss various modalities/interventions across the globe and design future safe therapeutics mitigating epigenetic changes for rendering the cancer treatment more effective.

We invite and encourage authors working in areas mentioned below to submit their cutting edge and stimulating research to the issues. Manuscript covering more than one topic would be given preference/priority for the publication. All submitted manuscripts would undergo rigorous peer review for their suitability of publication. The special issue is open for very limited number of review articles also which describe and report significant advancement in the current state of the art in the above-mentioned areas.

Potential topics include but are not limited to the following:

- Immune-editing and tumor relapse
- Histone modification and chemo/radioresistance
- TLR polymorphism and immune evasion
- HLA polymorphism and autoimmunity
- Epigenetics and bystander toxicities

Authors can submit their manuscripts through the Manuscript Tracking System at https://mts.hindawi.com/submit/journals/jo/ifsdt/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

Lead Guest Editor
Hridayesh Prakash, All India Institute of Medical Sciences, New Delhi, India
hridayesh.prakash@gmail.com

Guest Editors
Ashok Sharma, All India Institute of Medical Sciences, New Delhi, India
ashoksharma1202@gmail.com

G. K. Rath, All India Institute of Medical Sciences, New Delhi, India
gkrath2006@gmail.com

F. H. Schmitz-Winnenthal, Klinikum Aschaffenburg-Alzenau, Aschaffenburg, Germany
hubertus.schmitz-winnenthal@klinikum-aschaffenburg.de

Karsten Mahnke, Laboratory of Immune Tolerance, Heidelberg, Germany
karsten.mahnke@med.uni-heidelberg.de

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