

Special Issue on
**Molecular Mechanisms and Insights into Urological
 Cancer Cell Radioresistance**

CALL FOR PAPERS

Radiation therapy is an important treatment modality in urological oncology because it is an effective means of local tumor control and can be highly curative for many cancer types. Radiotherapy by achieving tumor local control prevents invasion, organ failure, and the seeding of secondary metastasis. Despite the recent advances in radiotherapy, the existence of radioresistant cells remains one of the most critical obstacles in radiotherapy and radiochemotherapy. Ionizing radiation induces DNA damage whose severity depends on the tumour microenvironment, being especially sensitive to the oxygen status of the cells. Malignant tumours contain a relatively rare and radioresistant subpopulation of cells termed “cancer stem cells” (CSCs): the response of these cells to radiation is a critical parameter for curability. CSCs radioresistance is characterized by a constitutive activation of the DNA damage repair mechanisms and hypoxic status that determines the lower propensity in producing ROS species in response to radiation. Investigation on the correlation between cancer cells’ radiosensitivity with particular attention to CDCs subpopulation, hypoxia, and the alterations in the molecular mechanisms responsible for DNA damage repair is essential to improve the efficiency of the radiotherapy treatment.

In this special issue we invite front-line researchers and authors around the world to contribute original research articles as well as review articles that will shed new light on the molecular mechanisms responsible for urological cancer cells radioresistance. We are particularly interested in thought-provoking articles that provide an overview of existing concepts, novel endings, controversies, and challenges concerning the relationship between cancer stem cells, hypoxia, and DNA damage repair. Articles on combining radiation and molecular targeting in cancer therapy are invited.

Potential topics include but are not limited to the following:

- ▶ Cancer stem cells and radioresistance
- ▶ Alterations of DNA damage repair mechanisms and their role in radioresistance
- ▶ Reactive oxygen species and radioresistance
- ▶ Hypoxia and radioresistance
- ▶ Signal transduction pathway and radioresistance
- ▶ miRNA and radioresistance
- ▶ Role of tumor stroma in resistance to ionizing radiation
- ▶ Autophagy and radioresistance
- ▶ Epithelial-mesenchymal transition and response to ionizing radiation
- ▶ radiosensitizers
- ▶ Role of SNPs in response to radiochemotherapy

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/bmri/urology/mucr/>.

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First Round of Reviews

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