



## Counteracting Radioresistance Using the Optimization of Radiotherapy

Guest Editor:

**Dr. François Chevalier**

UMR6252 CIMAP-Centre de  
Recherche sur les Ions, les  
MATériaux et la Photonique Team  
ARIA, Applications in  
Radiobiology with Accelerated  
Ions Campus Jules, Horowitz, Bd  
Henri Becquerel, BP 55027, Cedex  
05, F-14076 Caen, France

Deadline for manuscript  
submissions:

**closed (31 October 2019)**

### Message from the Guest Editor

Tumor radioresistance is associated with a failure to achieve loco-regional disease control following radiotherapy with the highest acceptable doses. Radiobiology research focused on tumor radioresistance has pointed out several mechanisms attenuating the efficacy of tumor irradiation and several treatment answers to overcome such radio-resistance. Personalized medicine allows us to adapt the treatment to diseases according to patient specificities and characteristics. For examples, genetic mutations on DNA repair genes open the possibility of synthetic lethality using targeted inhibitors, and hypoxia in the tumoral micro-environment can be weakened with localized chemotherapy associated with accurate imaging. Novel radiotherapy such as heavy ion therapy enable a better balance between high doses to the tumor and low doses to the surrounding healthy tissues. The combined treatment of radiotherapy with specialized chemotherapy and immunotherapy are under development to reduce radioresistance, secondary cancer recovery and metastases emergence.





an Open Access Journal by MDPI

## Editor-in-Chief

### Prof. Dr. Maurizio Battino

Department of  
Odontostomatologic and  
Specialized Clinical Sciences,  
Sez-Biochimica, Faculty of  
Medicine, Università Politecnica  
delle Marche, Via Ranieri 65,  
60100 Ancona, Italy

## Message from the Editor-in-Chief

The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

## Author Benefits

**Open Access:** free for readers, with article processing charges (APC) paid by authors or their institutions.

**High Visibility:** indexed within Scopus, SCIE (Web of Science), PubMed, PMC, MEDLINE, Embase, CAPlus / SciFinder, and other databases.

**Journal Rank:** JCR - Q1 (Biochemistry and Molecular Biology) / CiteScore - Q1 (Inorganic Chemistry)

## Contact Us

---

*International Journal of Molecular  
Sciences* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
www.mdpi.com

mdpi.com/journal/ijms  
ijms@mdpi.com  
X@IJMS\_MDPI