

## Special Issue

# Counteracting Radioresistance Using the Optimization of Radiotherapy

### 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.

---

### Guest Editor

Dr. François Chevalier

Team Applications in Radiobiology with Accelerated Ions, CIMAP (UMR6252, CEA-CNRS-ENSICAEN, Normandie Université), 14000 Caen, France

---

### Deadline for manuscript submissions

closed (31 October 2019)



## International Journal of Molecular Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.9  
CiteScore 9.0  
Indexed in PubMed



[mdpi.com/si/23312](https://mdpi.com/si/23312)

*International Journal of  
Molecular Sciences*  
Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[ijms@mdpi.com](mailto:ijms@mdpi.com)

[mdpi.com/journal/  
ijms](https://mdpi.com/journal/ijms)





# International Journal of Molecular Sciences

---

an Open Access Journal  
by MDPI

---

Impact Factor 4.9  
CiteScore 9.0  
Indexed in PubMed



[mdpi.com/journal/  
ijms](https://mdpi.com/journal/ijms)



## About the Journal

### Message from the Editor-in-Chief

The *International Journal of Molecular Sciences (IJMS)* 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, and molecular biophysics. *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.

---

### Editor-in-Chief

Prof. Dr. José L. Quiles  
Department of Physiology, Institute of Nutrition and Food Technology  
"Jose Mataix", Biomedical Research Center, University of Granada,  
Avda. Conocimiento s/n, 18100 Armilla, Granada, Spain

---

### 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, CAPus / SciFinder, and other databases.

#### Journal Rank:

JCR - Q1 (Biochemistry and Molecular Biology) / CiteScore - Q1 (Organic Chemistry)