

## Special Issue

# Mitochondrial Energy Metabolism in Cells and Tissues

### Message from the Guest Editor

Mitochondrial energy metabolism plays a critical role in maintaining cellular and tissue homeostasis, as mitochondria are the primary source of ATP production through oxidative phosphorylation. This energy supports essential physiological functions such as muscle contraction, neuronal activity, and cellular signaling. Beyond energy production, mitochondria are involved in regulating metabolic pathways, redox balance, and apoptosis. Dysregulation of mitochondrial energy metabolism is implicated in various diseases, including neurodegenerative disorders, cardiovascular diseases, and metabolic syndromes. Adequate regulation of mitochondrial energy metabolism is crucial for cellular health, and this is maintained by sophisticated quality control mechanisms. This Special Issue will focus on the intricate processes governing mitochondrial energy metabolism in cells and tissues, exploring how dysregulation contributes to disease and how targeting mitochondrial quality control mechanisms offers therapeutic potential. We invite submissions addressing recent advances in mitochondrial dynamics, mitophagy, and biogenesis, as well as their roles in health and disease.

### Guest Editor

Dr. Alexander Remels

Department of Pharmacology and Toxicology, School of Nutrition and Translational Research in Metabolism (NUTRIM), Maastricht University Medical Centre+ (MUMC+), 6200 MD Maastricht, The Netherlands

### Deadline for manuscript submissions

20 September 2025



## International Journal of Molecular Sciences

an Open Access Journal  
by MDPI

Impact Factor 4.9  
CiteScore 9.0  
Indexed in PubMed



[mdpi.com/si/219002](https://mdpi.com/si/219002)

*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*, 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.

---

### 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

---

### 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 (Organic Chemistry)