

## Special Issue

# Cellular Physiology and Aging: Membrane Dynamics, Intracellular Environment and Signaling Pathways

### Message from the Guest Editors

Over the past two centuries, average life expectancy has doubled in most developed countries. However, the increase in lifespan has not been mirrored by a corresponding extension of healthy life expectancy (healthspan). At the cellular level, aging is characterized by a progressive loss of structural and functional integrity, driven primarily by oxidative stress and inflammation. Alterations in ion channels, membrane transporters, and intracellular signaling pathways play a pivotal role in disrupting cellular homeostasis, thereby contributing to the overall decline in organismal function associated with aging.

This Special Issue seeks to gather original research articles and comprehensive reviews that elucidate the molecular mechanisms underlying age-related changes in membrane dynamics, redox homeostasis, and intracellular signaling. By integrating current knowledge and recent advances, our aim is to provide a holistic overview of the molecular pathways involved in aging and to highlight strategies for preventing, delaying, or potentially reversing the physiological and biochemical alterations that contribute to the onset of age-related diseases.

---

### Guest Editors

Dr. Alessia Remigante

Prof. Dr. Rossana Morabito

Dr. Sara Spinelli

---

### Deadline for manuscript submissions

30 December 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/247451](https://mdpi.com/si/247451)

*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)