Special Issue

Mitochondrial Dysfunction and Oxidative Stress in Human Diseases: Molecular Targets and Therapeutic Strategies

Message from the Guest Editor

Recent advances in molecular biology, bioenergetics. and redox medicine have shed light on the pathophysiological relevance of mitochondrial dynamics, ROS-mediated signaling, and mitophagy. Moreover, emerging the rapeutic strategies targeting mitochondrial pathways—such as mitochondria-specific antioxidants, metabolic modulators, and redox-active compounds—are gaining ground in translational research and early-phase clinical trials. This Special Issue aims to gather original research articles, comprehensive reviews, and translational studies that explore the molecular underpinnings of mitochondrial dysfunction and oxidative stress across human diseases. Topics of interest include but are not limited to mitochondrial bioenergetics and metabolic reprogramming, redox signaling, mitophagy and apoptosis, immunometabolic interactions, and therapeutic interventions aimed at restoring mitochondrial function and redox balance. Submissions combining basic science with biomolecular investigation in human samples are especially welcome.

Guest Editor

Dr. Carlo Acierno

Department of Internal Medicine and Infectious Diseases, San Carlo Hospital, Potenza, Italy

Deadline for manuscript submissions

closed (30 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/240015

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

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





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)

