

Special Issue

The Role of Iron in Human Physiology: Molecular Mechanisms and Therapeutic Applications

Message from the Guest Editor

Iron status influences a vast array of cellular processes. Iron imbalance or dysregulation can have adverse, clinically significant effects on gene regulation, enzyme activities, mitochondrial function, stress response, and even cell viability. Absolute or functional iron deficiency can lead to morbidity, impairs neurobehavioural development in early life, predisposes to immune dysfunction, and is associated with adverse outcomes in patients with cancer, heart failure, or those undergoing surgery. At the other end of the spectrum, iron has been associated with inflammatory processes, oxidative stress, mitochondrial dysfunction, and ferroptosis. Some of these mechanisms and related cellular events have implications for neurodegenerative, cardiovascular, pulmonary, hepatic, and other disorders.

The aim of this Special Issue is to disseminate emerging knowledge and overviews of the underlying pathophysiological mechanisms through which iron regulates cellular processes and the way its imbalance may bring about clinical effects. Research involving clinical studies or the use of cells is especially welcome.

Guest Editor

Dr. Alireza Morovat

Department of Clinical Biochemistry, Oxford University Hospitals,
Oxford OX3 9DU, UK

Deadline for manuscript submissions

31 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/239453

*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](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)