

Special Issue

Regulation and Biological Role of Mitochondrial DNA Architecture and Topology

Message from the Guest Editor

Nearly 20 years ago, it was discovered that vertebrates have genetically-conserved enzymes dedicated at modifying and controlling mtDNA topology, which indicates that DNA topology and architecture must play a crucial role in mitochondrial function. The above finding raised many questions—to name just a few: How is mtDNA-topology regulated, how does mtDNA replication and transcription impact on mtDNA-topology and vice versa; what role plays DNA topology in mitochondrial stability and mtDNA maintenance; to what extent is regulation of mtDNA topology relevant for mitochondria-delimited etiologies and aging? Meanwhile, a great deal of data germane to these issues have been gathered, and it seems that we are finally approaching a point where clarity emerges from chaos. This Special Issue aims at taking stock of the accumulated knowledge and making an effort to draw a coherent picture of our current understanding of the issue. **Keywords**

- mitochondrial DNA-topoisomerases
- mtDNA transcription
- mtDNA replication
- mtDNA maintenance
- mtDNA structure
- mtDNA topology
- mitochondrial ageing
- mitochondrial diseases

Guest Editor

Prof. Dr. Fritz Boege

Institut für Klinische Chemie und Laboratoriumsdiagnostik
Universitätsklinikum Düsseldorf (UKD), Moorenstraße 5, Geb. 13.51
(MNR-Klinik), D-40225 Düsseldorf, Germany

Deadline for manuscript submissions

closed (30 November 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/18476

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

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)