

Special Issue

Mitochondrial DNA and RNA

Message from the Guest Editor

Mitochondria are the primary sites of ATP production and are also involved in several other important cellular processes such as programmed cell death and cell signaling. Mitochondria are surrounded by a double-membrane system consisting of inner and outer mitochondrial membranes separated by an intermembrane space. The inner membrane delimitates the innermost compartment, the matrix, where mitochondrial DNA (mtDNA) resides. Human mtDNA is circular, 16 kbp long molecule that encodes 13 proteins, two ribosomal RNAs, and 22 tRNAs. Once transcribed, mitochondrial RNA (mtRNA) is processed, mitoribosomes are assembled, and mtDNA-encoded proteins belonging to the respiratory chain are synthesized. All these processes require the coordinated spatiotemporal action of several enzymes, and many different factors are involved in the regulation and control of protein synthesis and in the stability and turnover of mitochondrial DNA and RNA. The goal of this Special Issue is to present the current knowledge on mtDNA replication and repair mechanisms, processing of mitochondrial RNA transcripts, and how alteration of these processes may affect cell physiology in pathological conditions.

Guest Editor

Dr. Carlo Vascotto

Department of Medicine, University of Udine, 33100 Udine, Italy

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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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

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