

Special Issue

Zinc and Manganese in Human Health and Disease

Message from the Guest Editor

Metal ion homeostasis is fundamental for life. Fe, Mn and Zn play a pivotal role in mitochondrial metabolism, energy generation, anti-oxidation defense, transcriptional regulation, etc. The misregulation of expression or mutations in ion carriers and corresponding changes in Mn²⁺ and Zn²⁺ levels suggest that these ions play a pivotal role in cancer progression. Coordinated changes in Mn²⁺ and Zn²⁺ ion carriers have been detected in cancers, suggesting that particular mechanisms influenced by both ions might be required for growth of cancer cells, metastasis, and immune evasion. Mechanistically, Zn and Mn effects converge on mitochondria-induced apoptosis, transcriptional regulation, and immune response regulation by the cGAS-STING signaling pathway. Zn and Mn all influence cancer progression and treatment efficacy in animal models and clinical trials. In this Special Issue, we invite papers covering all aspects of Zn- and Mn-related biology, such as biosensor development, enzyme kinetics, drug development, biomarker research, clinical applications, interaction with other transition metals (Fe, Mg), Ca and Mg homeostasis and signaling.

Guest Editor

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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.

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