

Special Issue

Molecular Research of Selenocysteine in Selenoproteins

Message from the Guest Editor

Selenium is an essential micronutrient for humans. Found primarily in the form of selenocysteine, the 21st naturally occurring amino acid, selenocysteine is incorporated into nascent selenoproteins at specified UGA codons through a sophisticated translation pathway developed by nature. These methods of biosynthesis and insertion of selenocysteine differ in all three domains of life. In humans, 25 identified selenoproteins have been linked to various diseases, including neurological, cardiovascular, reproductive, and infectious diseases, cancer, and diabetes. The pathologies of these diseases are associated with imbalances between the generation and elimination of reactive oxygen or nitrogen species. Selenoproteins are not unique to humans or eukaryotes, but play critical roles in bacterial physiology and archaeal methanogenesis. Various mouse and cell models and functional genomics, as well as advances in chemical, synthetic biology, and bioinformatics technologies, have significantly driven forward the field of selenium biology. This Special Issue welcomes submissions addressing any aspect of selenium and selenoproteins in any domain of life.

Guest Editor

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Deadline for manuscript submissions

closed (20 March 2025)



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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.

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