

Special Issue on **Metalloproteins and Metallomics: Diverse Roles of Metals in Enzyme Activity and Cellular Function**

CALL FOR PAPERS

Metal ions play very important roles in biology, essential for plant, animal, and microbial life. Approximately one-third of all known proteins require metals to carry out their cellular functions, including metal storage, protein transport, enzymatic activity, and signal transduction. Also, many metalloproteins are involved in diseases, infections, immunological responses, and cancers. Although metal ions can be required protein cofactors, metals can also catalyze cytotoxic reactions via generation of reactive oxygen/nitrogen species. Recently, metallomics has been coined for comprehensive analysis of metal and metalloid species within a cell or a tissue. Thus, biochemical study of metals, metalloproteins, metalloids, and metal-containing biomolecules, as well as the transcriptome, proteome, interactome, and the metabolome constitute the whole metallome. Due to growing demands for applications in nanomaterial design, biosensor development, environmental monitoring, and medical therapeutics, understanding the nature of metal-protein interactions and artificial metalloenzymes is highly important. We invite investigators to contribute original research articles as well as review articles that will advance the knowledge of metalloproteins and the metallomics. Application of metalloproteins, analytical methods, and drug design targeting metalloproteins are also welcome.

Potential topics include but are not limited to the following:

- ▶ Role of metal(s) in enzyme activity and cellular function, such as sodium, potassium, calcium, magnesium, potassium, manganese, iron, cobalt, nickel, copper, zinc, molybdenum, tungsten, selenium, vanadium, chromium, and tin
- ▶ Working mechanism, structure, and function of metalloenzyme
- ▶ Metallomics: comprehensive analysis of the entirety of metal and metalloid species within a cell or a tissue
- ▶ Engineered metalloenzymes
- ▶ Downstream application of metals and metalloproteins
- ▶ Metalloid and metal-containing biomolecules
- ▶ Analytical methods for metalloproteins
- ▶ Metalloprotein inhibitor design, screening, and identification
- ▶ Latest technologies to monitor the action and metal content of metalloproteins
- ▶ Signaling pathways of metalloprotein activity
- ▶ Metalloprotein-involving disease, infection, immunological outcomes, and cancers
- ▶ Metal-triggered peptide/protein conformational changes and biological reactions

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/bca/mmdr/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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