



Bioinorganic Chemistry and Applications

Special Issue on

The Bioinorganic Chemistry of Zinc

CALL FOR PAPERS

Zinc is the second most abundant and the most widespread transition metal in the human body. Its biological functions are manifold and range from a vital role in immune function, memory, wound healing, cell division, and gene expression to cellular signaling and control of apoptosis. Zinc is essential for the normal growth, development, and reproduction of all higher plants, animals, and humans. Hundreds of zinc proteins are known to date and examples for zinc enzymes cover all six enzyme classes (oxidoreductases, transferases, hydrolases, isomerases, lyases, and ligases). Bioinformatic analysis of the human genome suggests a total number of up to 3000 zinc proteins. Zinc either participates directly in the catalytic mechanism or has a structural and regulatory function.

While the role of zinc in human health and diseases is well-established, the study of zinc enzymes and other zinc-binding proteins is not an easy task. Zn^{2+} being colorless and diamagnetic cannot be observed by routine electronic or EPR spectroscopies and ^{67}Zn NMR is an inherently challenging technique due to a combination of several unfavorable NMR properties of the NMR-active isotope. On the other hand, model complexes, a well-established tool of the bioinorganic chemist, have contributed significantly to our current understanding of enzymatic mechanisms, in particular those of zinc hydrolases such as carbonic anhydrase, carboxypeptidase, phosphatases, and -lactamases.

We invite original research articles as well as review articles that reflect the ongoing research interest in the bioinorganic chemistry of zinc and give the readers an insight into the diverse biological roles of this important and versatile biometal.

Potential topics include, but are not limited to:

- ▶ Model complexes for Zn enzymes
- ▶ Catalytic mechanisms and coordination motifs of Zn enzymes
- ▶ Zn storage and transport
- ▶ Zn in signaling
- ▶ Zn protein sensors
- ▶ Sensors for “free” zinc
- ▶ Zn finger proteins
- ▶ Zn in medicine
- ▶ Zn in human health and diseases

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/bca/bcz/>.

Lead Guest Editor

Andrea Erxleben, National University of Ireland, Galway, Ireland
andrea.erxleben@nuigalway.ie

Guest Editors

Zong-Wan Mao, Sun Yat-sen University, Guangzhou, China
cesmzw@mail.sysu.edu.cn

Artur Krezel, University of Wrocław, Wrocław, Poland
krezel@biotech.uni.wroc.pl

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First Round of Reviews

Friday, 25 March 2016

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