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**Metal-Containing Enzymes  
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Bioinorganic Chemistry became an independent scientific discipline before more than 50 years and achieved fast growth over the last 20 years. The purification and crystallization of metal-containing enzymes led to the discovery of the crystal structures of large number enzymes presented in Protein Data Bank (PDB). In addition, the development of the spectroscopic methods and massive instruments refined and complemented the picture of how metals interact with the proteins and cofactors providing further insight into the coordination states, geometries, oxidation states and covalent character of metal centres in proteins. The fast development of theoretical methods in combination with the growth of the computer facilities made possible the applications of the Quantum Mechanical, Molecular Dynamics and Combined Quantum Mechanical and Molecular Mechanical Methods for exploring the electronic structure, chemical bonding and mechanisms of Metal Containing Enzymes thus complementing the results achieved using experimental methods.

The present special issue of APCSB is centred on the recent advances in metalloenzymology and represents some of the most advanced achievements in the understanding the structure-functions relationships, mechanisms and biomedical roles of the metal-containing enzymes.

**Cover image:** Initial binding of matrix metalloproteinase-1 to the collagen triple-helix. Interdomain flexibility is required for matrix metalloproteinase 1 to correctly approach the substrate and begin collagenolysis. This research was originally published in the *Journal of Biological Chemistry*, Volume 288, pages 30659-30671 (2013). © the American Society for Biochemistry and Molecular Biology.



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