

Structure-Function Relationship of Metalloenzymes

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Education

1985 B.E. Kanazawa University
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Professional Employment

1990 Assistant Professor, Hokkaido University
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1994 Chief Scientist, Institute for Life Support Technology, Yamagata Technopolis Foundation
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Keywords

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Metalloproteins are a class of biologically important macromolecules, which have various functions such as oxygen transport, electron transfer, oxidation, and oxygenation. These diverse functions of metalloproteins have been thought to depend on the ligands from amino acid, coordination struc-

tures, and protein structures in immediate vicinity of metal ions. In this project, we are studying the relationship between the electronic structures of the metal active sites and reactivity of metalloproteins.

Selected Publications

- H. Fujii, "Effects of the Electron-Withdrawing Power of Substituents on the Electronic Structure and Reactivity in Oxoiron(IV) Porphyrin π -Cation Radical Complexes," *J. Am. Chem. Soc.* **115**, 4641–4648 (1993).
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- C. Wang, T. Kurahashi and H. Fujii, "Structure and Reactivity of Iodosylarene Adduct of Manganese(IV) Salen Complex," *Angew. Chem., Int. Ed.* **51**, 7809–7811 (2012).
- A. Takahashi, D. Yamaki, K. Ikemura, T. Kurahashi, T. Ogura, M. Hada and H. Fujii, "The Effect of the Axial Ligand on the Reactivity of the Oxoiron(IV) Porphyrin π -Cation Radical Complex: Higher Stabilization of the Product State Relative to the Reactant State," *Inorg. Chem.* **51**, 7296–7305 (2012).
- Z. Cong, S. Yanagisawa, T. Kurahashi, T. Ogura, S. Nakashima and H. Fujii, "Synthesis, Characterization, and Reactivity of Hypochlorito-Iron(III) Porphyrin Complexes," *J. Am. Chem. Soc.* **134**, 20617–20620 (2012).