

The Ubiquitous Roles of Cytochrome P450 Proteins

Editors Astrid Sigel,¹ Helmut Sigel¹ and Roland K. O. Sigel²

¹Department of Chemistry, Inorganic Chemistry, University of Basel, CH-4056 Basel, Switzerland

²Institute of Inorganic Chemistry, University of Zürich, CH-8057 Zürich, Switzerland

About this Book

Looking across the tree of life, it is amazing to find cytochrome P450 proteins represented in all life forms. Volume 3, devoted solely to the vital and still expanding research area concerning P450s, offers in 17 stimulating chapters written by 36 internationally recognized experts an authoritative and timely account of this fascinating subject.

The Ubiquitous Roles of Cytochrome P450 Proteins highlights, supported by nearly 2700 references, more than 20 tables and 190 illustrations, the function of these versatile catalysts which act as monooxygenases and insert an oxygen atom from dioxygen into a substrate molecule oxidizing it. P450s are important in the biosynthesis of hormones and signaling molecules as well as in xenobiotic metabolism and detoxification ranging from pharmaceuticals in humans to toxic substances in insects and plants. Mechanistic aspects and the design and engineering of P450 systems for biotechnological applications are also covered. MILS-3 is essential for scientists working in the wide range from bioinorganic chemistry all the way through to medicine including the clinic.

About the Editors

Astrid Sigel has studied languages and was an editor of the *Metal Ions in Biological Systems* series (until Volume 44) and also of the *Handbooks on Toxicity of Inorganic Compounds* (1988), on *Metals in Clinical and Analytical Chemistry* (1994; both with H. G. Seiler), and on *Metalloproteins* (2001; with Ivano Bertini) (Dekker, New York).

Helmut Sigel is Emeritus Professor (2003) of Inorganic Chemistry at the University of Basel, Switzerland, and a previous editor of the *MIBS* series until Volume 44. He serves on various editorial and advisory boards, published over 300 articles on metal ion complexes of nucleotides, coenzymes, and other ligands of biological relevance, and lectured worldwide. He was named *Protagonist in Chemistry* (2002) by ICA (issue 339); among further honors are the *P. Ray Award* (Indian Chemical Society, of which he is also an Honorary Fellow), the *Werner Award* (Swiss Chemical Society), a *Doctor of Science honoris causa* degree (Kalyani University, India), appointments as *Visiting Professor* (e.g., Austria, China, Japan, UK) and *Endowed Lectureships*.

Roland K. O. Sigel is Assistant Professor (2003) of Inorganic Chemistry at the University of Zürich, Switzerland, endowed with a *Förderungsprofessur* of the Swiss National Science Foundation. He received his doctoral degree *summa cum laude* (1999) from the University of Dortmund, Germany, working with Bernhard Lippert; thereafter he spent nearly three years at Columbia University, New York, USA, in the group of Anna Marie Pyle, (now Yale University); during the six years abroad he received several fellowships from various sources. His research focuses on the structural and catalytic role of metal ions in ribozymes, especially group II introns, and on related topics. He was also an editor of Volumes 43 and 44 of the *MIBS* series.

About the Series

Metal Ions in Life Sciences links coordination chemistry and biochemistry in their widest sense and thus increases our understanding of the relationship between the chemistry of metals and life processes. The series reflects the interdisciplinary nature of *Biological Inorganic Chemistry* and coordinates the efforts of scientists in fields like biochemistry, inorganic chemistry, coordination chemistry, molecular and structural biology, enzymology, environmental chemistry, physiology, toxicology, biophysics, pharmacy, and medicine. Consequently, the volumes are an essential source for researchers active in these and related fields as well as teachers preparing courses, e.g., in *Bioinorganic Chemistry*.

Cover design by Dan Jubb



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ISSN 1559-0836

ISBN 978-0-470-01672-5



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