

1. Record Nr.	UNINA9911019148603321
Titolo	The ubiquitous roles of cytochrome P450 proteins // edited by Astrid Sigel, Helmut Sigel, and Roland K.O. Sigel
Pubbl/distr/stampa	Chichester, : John Wiley, c2007
ISBN	9786610854738 9781280854736 1280854731 9780470028155 0470028157 9780470028148 0470028149
Descrizione fisica	1 online resource (680 p.)
Collana	Metal ions in life sciences, , 1559-0836 ; ; v. 3
Altri autori (Persone)	SigelAstrid SigelHelmut SigelRoland K. O
Disciplina	572.6 572.7
Soggetti	Cytochrome P-450 Cytochromes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Metal Ions in Life Sciences; Historical Development and Perspectives of the Series; Preface to Volume 3; Contents; Contributors to Volume 3; Titles of Volumes 1-44 in the Metal Ions in Biological Systems Series; Contents of Volumes in the Metal Ions in Life Sciences Series; 1 Diversities and Similarities in P450 Systems: An Introduction; 1. Oxygenases: Mediators of Biochemical Diversity; 2. P450 Superfamily: Diversity at the Sequence Level; 3. Diversity of P450 Structures: Folds and Conformations for Functions; 4. Diversity in P450 Mechanisms; 5. Diversity in Regulation Across the Superfamily 6. Diversity in the Evolution of Common Metabolic Functions7. Summary and Outlook; Acknowledgments; Abbreviations; References; 2 Structural and Functional Mimics of Cytochromes P450; 1. Introduction;

2. Iron Porphyrins Carrying a Thiolate or Modified Thiolate Ligand; 3. Structurally Remote P450 Mimics; 4. Concluding Remarks; Acknowledgments; Abbreviations; References; 3 Structures of P450 Proteins and Their Molecular Phylogeny; 1. Introduction; 2. P450 Evolution; 3. P450 Families and Subfamilies; 4. P450 Structures; 5. Variation in P450 Function and Fold; 6. Archaeon P450s; 7. Summary and Conclusions; Acknowledgments; Abbreviations; References; 4 Aquatic P450 Species; 1. Introduction. 'P450s Under the Surface'; 2. Diversity of Aquatic Species; 3. P450 Activities in Aquatic Invertebrates; 4. Aquatic P450 Gene Families Identified; 5. How Can We Use Information About P450s in Aquatic Species?; 6. Conclusions and Outlook; Acknowledgments; Abbreviations; References; 5 The Electrochemistry of Cytochrome P450; 1. Introduction; 2. Redox Titration (Potentiometric Equilibrium) Measurements; 3. Voltammetric (Dynamic) Measurements; 4. Conclusions; Acknowledgments; Abbreviations; References; 6 P450 Electron Transfer Reactions; 1. Introduction; 2. Catalytic Cycles; 3. Electron Tunneling Wires; 4. Concluding Remarks; Acknowledgments; Abbreviations; References; 7 Leakage in Cytochrome P450 Reactions in Relation to Protein Structural Properties; 1. Introduction; 2. Protein Structural Parameters; 3. The Reaction Cycle of Cytochrome P450; 4. Protein Structural Parameters and Extent of Competitive Reactions; 5. Concluding Remarks; Acknowledgments; Abbreviations; References; 8 Cytochromes P450 - Structural Basis for Binding and Catalysis; 1. Introduction; 2. Ligand Binding: Substrate Recognition and Access to the Distal Pocket; 3. Architecture of the Active Site of CYP101; 4. The Distal Acid-Alcohol Pair; 5. Experimental Characterization of Reaction Intermediates. Radiolysis as a Tool to Study Redox Reactions; 6. Crystal Structures of Oxy-Ferrous Complexes; 7. Mechanism: Summary, Conclusions, Speculations; Acknowledgments; Abbreviations; References; 9 Beyond Heme-Thiolate Interactions: Roles of the Secondary Coordination Sphere in Cytochrome P450 Systems; 1. Overview of Cytochrome P450 Active Site Structure; 2. Secondary Coordination Sphere on the Proximal Side

Sommario/riassunto

Helmut Sigel, Astrid Sigel and Roland K.O. Sigel, in close cooperation with John Wiley & Sons launch a new Series "Metal Ions in Life Sciences". There exists a whole range of books on Cytochromes P450, but none with the focus of this volume. This new volume in the Series concentrates on current hot topics in the area and tries to work out the underlying common developments. As a result the reader will find a systematic account of new results in this exciting research area. The table of contents gives an idea on the wide span of chapters, starting with overviews and the presentation of spec
