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Secondary and Tertiary Structures of Nucleic AcidsReferences; Chapter 5. An Overview of Intermediary Metabolism and Bioenergetics; Introduction; Redox Reactions in Metabolism; The Central Role of ATP in Metabolism; The Types of Reaction Catalysed by Enzymes of Intermediary Metabolism; An Overview of Intermediary Metabolism: Catabolism; Selected Case Studies: Glycolysis and the Tricarboxylic Acid Cycle; An Overview of Intermediary Metabolism: Anabolism; Bioenergetics: Generation of Phosphoryl Transfer Potential at the Expense of Proton Gradients; References

Chapter 6. Methods to Study Metals in Biological SystemsIntroduction; Magnetic Properties; Electron Paramagnetic Resonance (EPR) Spectroscopy; Mossbauer Spectroscopy; NMR Spectroscopy; Electronic and Vibrational Spectroscopies; Circular Dichroism and Magnetic Circular Dichroism; Resonance Raman Spectroscopy; Extended X-Ray Absorption Fine Structure; X-Ray Diffraction; References; Chapter 7. Metal Assimilation Pathways; Introduction; Metal Assimilation in Bacteria; Metal Assimilation in Plants and Fungi; Metal Assimilation in Mammals; References

Chapter 8. Transport, Storage and Homeostasis of Metal IonsIntroduction; Metal Storage and Homeostasis in Bacteria; Metal Transport, Storage and Homeostasis in Plants and Fungi; Metal Transport, Storage and Homeostasis in Mammals; References; Chapter 9. Sodium and Potassium-Channels and Pumps; Introduction: - Transport Across Membranes; Sodium Versus potassium; Sodium Channels; References; Chapter 10. Magnesium-Phosphate Metabolism and Photoreceptors; Introduction; Magnesium-Dependent Enzymes; Phosphoryl Group Transfer: Kinases; Phosphoryl Group Transfer: Phosphatases

Stabilization of Enolate Anions: The Enolase Super Family

Sommario/riassunto

The importance of metals in biology, the environment and medicine has become increasingly evident over the last twenty five years. The study of the multiple roles of metal ions in biological systems, the rapidly expanding interface between inorganic chemistry and biology constitutes the subject called Biological Inorganic Chemistry. The present text, written by a biochemist, with a long career experience in the field (particularly iron and copper) presents an introduction to this exciting and dynamic field. The book begins with introductory chapters, which together constitute an overview of th