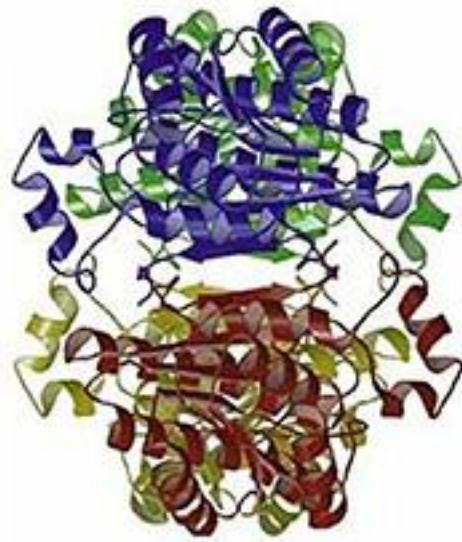


Biocatalysis

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Biocatalysis

Fundamentals and Applications



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The book covers the fundamentals of the field of biocatalysis that are not treated in such detail (or even not at all) in existing biocatalysis books or biochemistry textbooks.

It of course does not substitute existing biochemistry textbooks but will serve a suitable supplement as it discusses biochemical fundamentals in connection with the respective topics.

With focus on the interdisciplinary nature of biocatalysis, the book contains many aspects of fundamental organic chemistry and some of inorganic chemistry as well, which should make it interesting not only for biochemistry but also for chemistry students. An important theme being emphasized in the book is that applied biocatalysis is one of the main prerequisites for a sustainable development.

The topics covered ranges from basic enzyme chemistry (biosynthesis, structure, properties, interaction forces, kinetics) to a detailed description of catalytic mechanisms. It covers the fundamentals of the different enzyme classes together with their applications in native and in immobilized state or in the form of whole cells in aqueous as well as non-conventional media. Topics such as catalytic antibodies, nucleic acid catalysts, non-ribosomal peptide synthesis, evolutionary methods, and the design of cells are also included.

Contents: Introduction; History of Biocatalysis; Classification of Enzymes; Non-protein Groups in Biocatalysis; Introduction into Kinetics; Enzyme Kinetics; Mechanisms in Enzymatic Catalysis and Enzyme Models; Synthesis of Peptide Antibiotics; Immobilization Biocatalysts; Structure, Function, and Application of Enzymes; Enzymes in Non-conventional Media; Methods to Improve Biocatalysts; Metabolic Pathway Engineering; Catalytic Antibodies; Nucleic Acids as Catalysts; Use of Enzymes in Industry; White Biotechnology.

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