

An authoritative review of the latest developments in the chemical biology of enzymes

In the first decade of the twenty-first century, enzymes and their multiple applications have played a critical role in the discovery and development of many new therapeutic agents. This book is a coordinated compilation of research expertise and current opinion uniquely focused on enzymes and their properties and applications.

Compiled by editors with a combined pharmaceutical experience of over sixty years, the text provides in-depth reviews of recent developments in selective topics on biosynthesis, biocatalysis, and chemical biology of enzymes as it applies to drug discovery, development, and manufacture.

The first in a multi-part series on enzymes, this volume features three sections:

- *New Approaches to Find and Modify Enzymes* describes the emerging field of metagenomics, presents the practical applications of directed evolution to enzymes and pathways, and explores approaches for the discovery and design of biocatalysts
- *Biocatalytic Applications* reviews specific applications of different reactions in producing active pharmaceutical ingredients and surveys recent developments employing enzymes in organic synthesis
- *Biosynthetic Applications* goes over successful drug discoveries and developments by combinatorial biosynthesis and reviews the application of combinatorial biosynthesis among multiple compatible hosts

These timely discussions, which cover everything from chemical biology of enzymes, to the redesign of binding and catalytic specificities of enzymes, make this volume a valuable tool for keeping up to date. As such, it is an important read for researchers, students, and professors in the study of biotechnology, life sciences, biochemistry, enzymology, medicinal chemistry, and natural products.

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