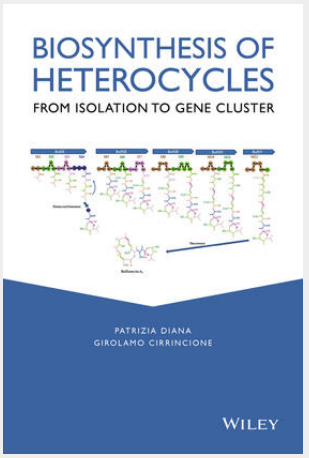
Diana / Cirrincione

Biosynthesis of Heterocycles

From Isolation to Gene Cluster



This book describes biosynthetic methods to synthesize heterocyclic compounds, offering a guide for the development of new drugs based on natural products. The authors explain the role of natural products in chemistry and their formation along with important analytical methods and techniques for working with heterocycles. * Covers methods and techniques: isotopic labelling, enzymes and mutants, and pathway identification * Provides a thorough resource of information specifically on heterocyclic natural products and their practical biosynthetic relevance * Explains the role of natural products in chemistry and their formation * Discusses gene cluster identification and the use of biogenetic engineering in pharmaceutical application

Biosynthetic studies, facilitated by the use of modern analytical techniques, have allowed researchers to purify, identify, and handle the enzymes responsible for the complex series of steps leading to natural compounds - an important source of leads for drugs and therapeutics. With recent advances, chemists frequently use biosynthetic approaches to biologically interesting compounds. Many natural products, some with potent pharmacological activity and of paramount practical importance, are based on heterocyclic frameworks. Offering a guide for the development of new drugs based on these important compounds, this book describes biosynthetic methods to synthesize heterocyclic compounds. After an introduction discussing synthetic pathways to illustrate the basics of biosynthesis, the authors explain natural products in chemistry and their formation along with important analytical methods and techniques for working with heterocycles - including isotopic labelling, enzymes and mutants, and pathway identification. Subsequent chapters describe heterocycle biosynthesis starting from natural products, with particular attention to bioactive molecules. Chemical researchers using this book come away with a number of benefits, including: * Coverage of methods and techniques: isotopic labelling, enzymes and mutants, and pathway identification * A thorough resource of information specifically on heterocyclic natural products and their practical biosynthetic relevance * Explanation of the role of natural products in chemistry and their formation * Discussion of gene cluster identification and the use of biogenetic engineering in pharmaceutical application

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