Diversity-Oriented Synthesis: Basics and Applications in Organic Synthesis, Drug Discovery, and Chemical Biology
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DESCRIPTION

Discover an enhanced synthetic approach to developing and screening chemical compound libraries

Diversity-oriented synthesis is a new paradigm for developing large collections of structurally diverse small molecules as probes to investigate biological pathways. This book presents the most effective methods in diversity-oriented synthesis for creating small molecule collections. It offers tested and proven strategies for developing diversity-oriented synthetic libraries and screening methods for identifying ligands. Lastly, it explores some promising new applications based on diversity-oriented synthesis that have the potential to dramatically advance studies in drug discovery and chemical biology.

Diversity-Oriented Synthesis begins with an introductory chapter that explores the basics, including a discussion of the relationship between diversity-oriented synthesis and classic combinatorial chemistry. Divided into four parts, the book:

• Offers key chemical methods for the generation of small molecules using diversity-oriented principles, including peptidomimetics and macrocycles

• Expands on the concept of diversity-oriented synthesis by describing chemical libraries

• Provides modern approaches to screening diversity-oriented synthetic libraries, including high-throughput and high-content screening, small molecule microarrays, and smart screening assays
• Presents the applications of diversity-oriented synthetic libraries and small molecules in drug discovery and chemical biology, reporting the results of key studies and forecasting the role of diversity-oriented synthesis in future biomedical research.

This book has been written and edited by leading international experts in organic synthesis and its applications. Their contributions are based on a thorough review of the current literature as well as their own firsthand experience developing synthetic methods and applications.

Clearly written and extensively referenced, *Diversity-Oriented Synthesis* introduces novices to this highly promising field of research and serves as a springboard for experts to advance their own research studies and develop new applications.

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**ABOUT THE AUTHOR**

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