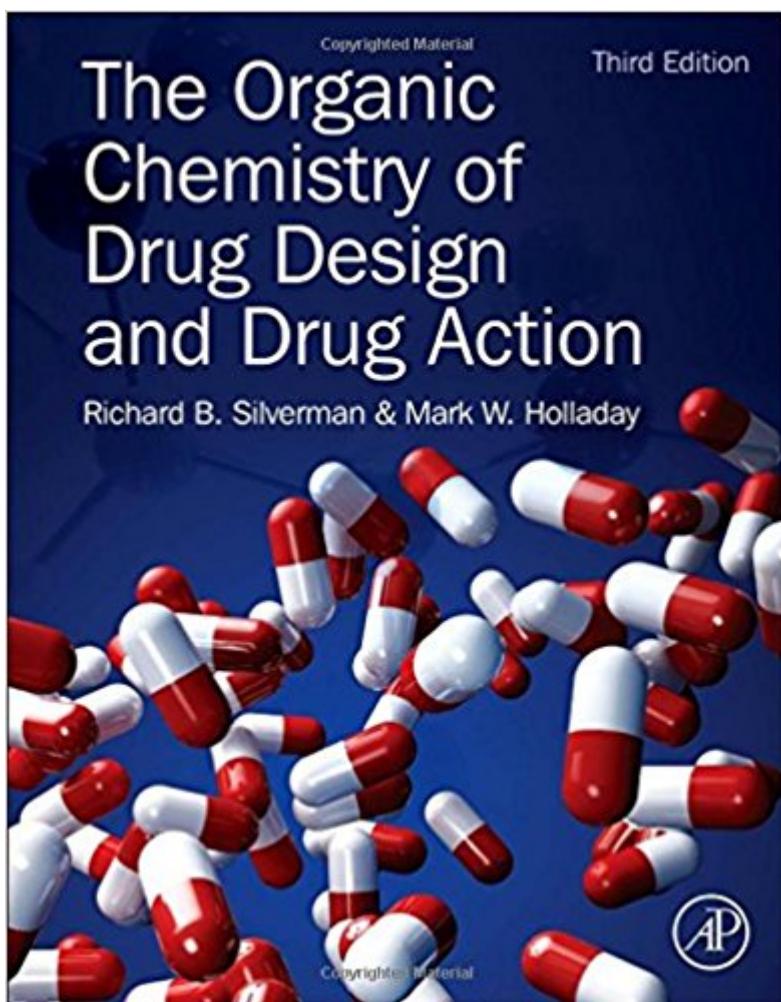


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# The Organic Chemistry Of Drug Design And Drug Action, Third Edition



## Synopsis

The Organic Chemistry of Drug Design and Drug Action, Third Edition, represents a unique approach to medicinal chemistry based on physical organic chemical principles and reaction mechanisms that rationalize drug action, which allows reader to extrapolate those core principles and mechanisms to many related classes of drug molecules. This new edition includes updates to all chapters, including new examples and references. It reflects significant changes in the process of drug design over the last decade and preserves the successful approach of the previous editions while including significant changes in format and coverage. This text is designed for undergraduate and graduate students in chemistry studying medicinal chemistry or pharmaceutical chemistry; research chemists and biochemists working in pharmaceutical and biotechnology industries. Updates to all chapters, including new examples and references

Chapter 1 (Introduction): Completely rewritten and expanded as an overview of topics discussed in detail throughout the book

Chapter 2 (Lead Discovery and Lead Modification): Sections on sources of compounds for screening including library collections, virtual screening, and computational methods, as well as hit-to-lead and scaffold hopping; expanded sections on sources of lead compounds, fragment-based lead discovery, and molecular graphics; and deemphasized solid-phase synthesis and combinatorial chemistry

Chapter 3 (Receptors): Drug-receptor interactions, cation- $\pi$  and halogen bonding; atropisomers; case history of the insomnia drug suvorexant

Chapter 4 (Enzymes): Expanded sections on enzyme catalysis in drug discovery and enzyme synthesis

Chapter 5 (Enzyme Inhibition and Inactivation): New case histories: for competitive inhibition, the epidermal growth factor receptor tyrosine kinase inhibitor, erlotinib and Abelson kinase inhibitor, imatinib for transition state analogue inhibition, the purine nucleoside phosphorylase inhibitors, forodesine and DADMe-ImmH, as well as the mechanism of the multisubstrate analog inhibitor isoniazid for slow, tight-binding inhibition, the dipeptidyl peptidase-4 inhibitor, saxagliptin

Chapter 7 (Drug Resistance and Drug Synergism): This new chapter includes topics taken from two chapters in the previous edition, with many new examples

Chapter 8 (Drug Metabolism): Discussions of toxicophores and reactive metabolites

Chapter 9 (Prodrugs and Drug Delivery Systems): Discussion of antibody- $\pi$  drug conjugates

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## Customer Reviews

"This book is a tour de force in the title area....This book adopts a novel format that focuses on the rational chemical underpinnings to both drug discovery and drug development. It seeks to illuminate the workings of drugs at the molecular level. Thus, this book contrasts with the traditional presentation which is organized around various classes of drugs....This book would be appropriate for advanced undergraduate students and graduate students and would probably be well suited as a text for course applications, especially at the graduate level. It is strongly recommended to scientists who are seeking an efficient introduction to medicinal chemistry, background in a specific drug principle or category, or a dose of inspiration."--Bruce E. Maryanoff, R.W. Jounhson

Pharnaceutical Research Institute, JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, Vo. 115, No.12, 1993 "For the first time the principles of medicinal chemistry/pharmacology are collected in a unified, well-organized and clearly presented fashion. It is so clearly written that it will be of value to both students and veteran scientists...My congratulations to Dr. Silverman in consolidating such a multiplicity of facts and data so as to truly begin to reduce medicinal chemistry from a hybrid of chemistry, pharmacology and related sciences to a single, clearly defined, rationalized discipline."--CARL KAISER, Ph.D., Director, Medicinal Chemistry, NOVA PHARMACEUTICAL CORPORATION "The author shows an uncanny ability to present the salient principles in a systematic, well-balanced and logical way...The book will turn out to be very popular with students because the material is presented clearly...The numerous superbillustrations included are used very effectively by the author to communicate and/or clarify concepts and ideas."--William C. Groutas, Ph.D., Professor of Chemistry, WICHITA STATE UNIVERSITY "I find [Chapter 8] to be an unusually comprehensive, clear and well organized discussion on prodrugs. Although the concepts are complex, they are presented in a logical, easily understood format. Dr. Silverman's use of schematics to illustrate both chemical and biochemical principles is especially effective and should

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wonderful book the concepts are explained easy and clear for you to understand Even if chemistry isn't your best subject. Love the examples at the end of the chapter to test your understanding. the author is very knowledgeable on drug design.

A great book. my first go-to for medchem examples

Well thought out and referenced, if you are interested in drug design you should have this book

worked great

perfect for reading

It came in good time and it is a good read, although it is hard to get the story that it is telling

Well written and thorough

this book is really unreadable for beginner

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