

Book Reviews

Smith and Williams' Introduction to the Principles of Drug Design and Action, 3rd Edition. Edited by H. John Smith. Harwood Academic Publishers, Amsterdam. 1998. xiii + 454 pp. 17 x 25 cm. ISBN 90-5702-205-2. \$30.00 (paperback) and \$80.00 (cloth).

Smith and his co-authors provide a thorough introduction to the practical principles of drug action and drug design in this third edition. The 13 chapters in this book attempt to provide an overview of most aspects of modern drug design from the computer and lab bench to clinical trials. Most chapter topics give even the average reader new to drug design and action a good glimpse at the current level of knowledge, the most challenging problems faced in these areas, and some of the successes. The topics selected build upon the strengths of the previous two editions and reflect a greater emphasis on biological systems at the molecular level. Three new chapters have been added, dealing with the pharmacological consequences of drug chirality, neurotransmitters, and the multidisciplinary research inherent in moving a drug lead from the lab bench to the clinic.

Readers will find strengths of this very reasonably priced book to include the breadth of topics, the overall quality of the chapters, the consistency of the chapters, the expertise of the authors, the extensive illustrations including color plates for the molecular modeling section, and the "Further Reading" sources. The first five chapters deal with general principles or techniques, including: Processes of Drug Handling by the Body (Chapter 1), The Design of Drug Delivery Systems (Chapter 2), Intermolecular Forces and Molecular Modeling (Chapter 3), Chirality of Drugs and Its Pharmacological Consequences (Chapter 4), and Quantitative Structure-Activity Relationships and Drug Design (Chapter 5). Inclusion or greater coverage of topics important to lead design, discovery, and development such as 3-D QSAR, 3-D database searching, molecular

diversity, and combinatorial chemistry would have enhanced this collection of general principles or techniques. Chapter 6, From Programme Sanction to Clinical Trials: A Practical View of the Quest for Arimidex™, a Potent Selective Inhibitor of Aromatase, follows the example of the underlying rationale, lead discovery, and development of a clinical treatment for breast cancer. There are four broad "approach" topics in the remainder of the book: Pro-Drugs (Chapter 7), Enzyme Inhibitors as Drugs (Chapter 8), Recombinant DNA Technology: Monoclonal Antibodies (Chapter 12), and Pharmaceutical Bio-inorganic Chemistry and Its Pharmaceutical Applications (Chapter 13). A solid, multiple-authored chapter entitled Neurotransmitters: Agonists and Antagonists (Chapter 10) provides a very brief introduction to the concept of chemical neurotransmitters followed by a more detailed discussion of serotonin, histamine, and dopamine receptors and ligands. While drugs affecting many therapeutic areas are described in the other chapters, two specific important areas receive special attention: The Chemotherapy of Cancer (Chapter 9) and Design of Antimicrobial Chemotherapeutic Agents (Chapter 11). The quality and price of this textbook should make it an important addition to the shelves of a broad audience including undergraduates studying medicinal chemistry, biochemistry, and pharmaceutical sciences; graduate students in the area of medicinal chemistry or undertaking rational drug design research; chemistry graduates of varying levels entering the pharmaceutical industry; and science libraries.

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