Book Reviews

Smith and Williams' Introduction to the Principles of Drug Design and Action. Fourth Edition. Edited by H. John Smith. CRC/Taylor and Francis, Boca Raton, FL. 2006. xvi + 658 pp. 18.5 × 26 cm. ISBN-13 978-0-415-28877-4. $139.95.

This book consists of 17 chapters on a variety of topics related to drug design and action. Sixteen of these chapters cover broad topics, and one chapter is focused on a single drug target, aromatase. The 16 chapters are divided into four groups: (1) general drug action (five chapters), e.g., Chapter 1, Processes of Drug Handling by the Body; (2) broad aspects of drug design (seven chapters), e.g., Chapter 9, Design of Enzyme Inhibitors as Drugs; (3) applications of drug design to a group of diseases or physiological processes (three chapters), e.g., Chapter 16, Design of Antibacterial, Antifungal, and Antiviral Agents; and (4) general pharmaceutical applications (one chapter), i.e., Chapter 17, Pharmaceutical Applications of Bioinorganic Chemistry. Of the three chapters devoted to applications of drug design, two are devoted to chemotherapy: Chapter 14 (The Chemotherapy of Cancer) and Chapter 16. Only one chapter is devoted to applications of drug design to the physiological and pathophysiological processes of the body: Chapter 15 (Neurotransmitters, Agonists and Antagonists).

The Editor states in the Preface that "the emphasis in this book is on principles, which are appropriately illustrated by groups of drugs in current (or even future) use." Consistent with the emphasis on principles, four new chapters were added to the selection in the third edition: Chapter 3, Fundamental Pharmacokinetics; Chapter 10, Peptide Drug Design; Chapter 11, Combinatorial Chemistry: A Tool for Drug Discovery; and Chapter 13, The Human Genome and Its Impact on Drug Discovery and Therapy.

This book is intended as a possible text for undergraduate chemistry students interested in medicinal chemistry or for graduate students as a means to learn the basics of medicinal chemistry. While classical approaches are described for drug design with the inclusion of the more recent context of the human genome project, the approach does not provide any insights that are not found in a variety of medicinal chemistry textbooks. Although it is a 2006 book, few of the chapters have many references more recent than 2002. Unfortunately, this produces a rather dated view. Although the title is very general with regard to drug design and action, all of the authors are from the United Kingdom or Germany, which provides a very limited perspective for topics of worldwide interest. While it is very difficult to validate every structure in this book, structure **15.30** on page 531 is clearly wrong. Fortunately, errors of this sort seem to be rare in the book.

In summary, some medicinal chemists in academia or the pharmaceutical industry may find this book instructive for certain classes of biomolecules or classical approaches to drug design. It should probably be included in most comprehensive library collections of medicinal chemistry texts and monographs.

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