Book Reviews

Contemporary Drug Synthesis. By Jie-Jack Li, Douglas S. Johnson, Drago R. Sliskovic, and Bruce D. Roth. John Wiley & Sons, Inc., Hoboken, NJ. 2004. xv + 221 pp. 19.5 × 24.5 cm. ISBN 0-471-21480-9. $89.95.

This aptly titled book showcases the creativity applied by chemists to drug synthesis. The authors describe the synthesis of 41 drugs from 14 therapeutic classes representing 15 pharmaceutical companies. Chapter titles are the following: Antithrombotics, Ticlopidine (Ticlid) and Clopidogrel (Plavix); Anti-inflammatory Cyclooxygenase-2 Selective Inhibitors, Celecoxib (Celebrex) and Rofecoxib (Vioxx); H+/K+-ATPase Inhibitors, Esomeprazole (Nexium); Protein−Tyrosine Kinase Inhibitors, Imatinib (Gleevac) and Gefitinib (Iressa); Non-Sedating Antihistamines, Cosmeceuticals, Isotretinoin (Accutane), Tazarotene (Tazorac), Minoxidil (Rogaine), and Finasteride (Propecia); Antibacterials, Ciprofloxacin (Cipro) and Linezolid (Zyvox), Atypical Antipsychotics, Atorvastatin Calcium (Lipitor); Antidepressants, Anti-Obesity, Orlistat (Xenical); Triptans for Migraine, PDE 5 Inhibitors for Erectile Dysfunction, Sildenafil (Viagra), Vardenafil (Levitra), and Tadalafil (Cialis); Antiasthmatics. Chapters begin with succinct summaries of the history, medicinal chemistry, pharmacology, and therapeutics of each drug class. In some cases, comparative pharmacokinetic data are included; only rarely is drug metabolism discussed. However, the essence of the book is the detailed description of drug syntheses, most often process chemistry routes.

For all of the drugs, both generic (USAN) and brand names are given throughout the book and in an alphabetical listing following the table of contents. Also included are three pages of acronyms and abbreviations and an eight-page subject index. This outstanding book is marred only slightly by a few instances of mismatched compound numbers, incorrect nomenclature, and incorrect structures (testosterone, dihydrotestosterone in Chapter 6, ciprofloxacin in Chapter 7, and orlistat in Chapter 11). Nonetheless, the authors have certainly provided a very useful book not only for their targeted audience of pharmaceutical industry scientists but, as noted on the book cover, for the larger medicinal and organic chemistry community of students, educators, and researchers.

Jonathan L. Vennerstrom
College of Pharmacy
University of Nebraska Medical Center
Omaha, Nebraska 68198-6025

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A Handbook of Bioanalysis and Drug Metabolism. Edited by Gary Evans. CRC Press, Boca Raton, FL. 2004. xvi + 390 pp. 18.5 × 26 cm. ISBN 0-415-27519-9. $129.95

About 30 authors, all from GlaxoWellcome R&D groups in the U.K., the U.S., and Italy, contributed to this volume. As explained in two prefaces, it was envisaged as covering "the necessary information to work in a pharmaceutical drug metabolism and bioanalysis function". Significantly, the Editor states the following: "It was decided to allow each chapter to stand alone. Each chapter was the responsibility of the contributing authors". This suggests that the book is a compilation of essays rather than an edited treatise. Nineteen chapters then consider the various aspects of ADMET: sample preparation, HPLC, MS, immunoassay, preclinical pharmacokinetics, toxicokinetics, protein binding, isotope studies, drug metabolism, drug interactions, and molecular biology.

Whether or not this effort truly conveys "the necessary information" for industrial scientists depends a great deal on the interests of the individual reader, inasmuch as some chapters are much better than others. The term "handbook" certainly does not impose any particular requirements on informational content, given that volumes ranging from Beilstein to the "Handbook for Boys" that guided the Scout troop of my boyhood have received that title. But in this reviewer's mind, a handbook should provide an entry into the literature, and this one disappoints in performing that task. Almost half of the chapters have six or fewer references; those discussing the important topics of phase I metabolism and the identification of drug metabolites have none at all. Moreover, few of the references that are provided date from later than 1999. Exceptions to this are the well-documented chapters on molecular biology and on applications to drug discovery. Among other problems that may stem from an absence of editorial oversight are inconsistencies such as "only un-ionized drugs can diffuse across cell membranes" (p 17) and "small polar molecules may percolate ... via the so-called paracellular route" (p 368); the virtual omission of important topics such as prodrugs, the paracellular pathway, and transporters; and the peculiar structural formulas of chapter 13, which omit all hydrogen atoms.

This book is attractively printed and produced by the publisher and has a useful nine-page index; there is no author index. Individuals and libraries considering it for acquisition may wish to examine other recent texts that cover similar territory: "Handbook of Essential Pharmacokinetics, Pharmacodynamics and Drug Metabolism for Industrial Scientists" (2001) by Kwon, "Principles and Practice of Bioanalysis" (2000) by Venn, and "Pharmacokinetics and Metabolism in Drug Design" (2001) by Smith et al.

Manfred E. Wolff
Intellepharm, Inc.
1304 Morningside Drive
Laguna Beach, California 92651-2809

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