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Book Review

Pharmacokinetics and Metabolism in Drug Design (Second Revised Edition). D. A. Smith, H. van de Waterbeemd, D. K. Walker. Wiley-VCH, Weinheim, 2006, hardcover, 207 pp. ISBN: 3-527-31368-0; 3-527-31368-6

"Pharmacokinetics and Metabolism in Drug Design (Second Revised Edition)" is a book (177 pages excluding subject index) that provides an overview on the fundamental principles and latest applications in the field of pharmacokinetics and metabolism in drug design. This book is appropriate for scientists and students with backgrounds in pharmaceutical sciences, pharmacokinetics, drug metabolism, pharmacology or chemistry. This book would be most useful to graduate students or junior pharmaceutical scientists trying to appreciate the importance of pharmacokinetics and drug metabolism as it is applied to drug design. Although the book has chapters, which cover the general pharmacokinetic and drug metabolism issues (i.e., ADME principles, renal and hepatic clearance, toxicology, inter-species scaling and high throughput ADME studies), this reviewer feels these chapters at times appear quite terse and lacked depth.

The book is divided into 10 chapters. Chapter 1, "Physicochemistry", provides a written but relatively limited overview of the physicochemical factors which influence the development of drug candidates. Chapters 2–7 provides general information about fundamental principles of drug administration, absorption, distribution, and clearance (renal and hepatic). It is possible from reading these chapters to gain an appreciation of how complex and interwoven these concepts and principles are.

Chapters 8 through 10 discuss issues around toxicity, toxicity predictions, toxicogenomics, inter-species scaling and high throughput ADME studies. Specific examples are presented in these chapters as well as fundamental issues around allometric scaling, single animal scaling, computational approaches to pharmacokinetics and metabolism among others. I found these chapters quite compelling and the best read of this book.

For all the chapters the illustrations are done professionally and are for the most part not cluttered.

One is left with the impression that although the focus of this book was on the fundamental principles and applications of pharmacokinetics and drug metabolism, a more overlying message is being sent about the importance of these disciplines in drug development. With that being said, this is a well-written, updated examination of physicochemistry, pharmacokinetics and drug metabolism strategies currently being employed in drug design.

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