Book Reviews

Absorption and Drug Development. By Alex Avdeef. Wiley/Interscience, Hoboken, NJ. 2003. xxiv + 287 pp. 16 × 24 cm. ISBN 0471423653. $89.95.

The book consists of seven chapters and a short summary. Following a brief introduction, the book discusses various transport models, the charged state, partitioning into octanol, partitioning into liposomes, solubility, and finally permeability. The latter topic occupies more than half of the book. As is evident from the very detailed table of contents, each chapter covers a fairly wide variety of specific topics. The tables that list solubility, partitioning, and permeability properties of a large number of drugs are particularly useful. In addition, many detailed examples and drawings are provided throughout the book. The permeability chapter covers a number of approaches for the determination of permeability, with particular emphasis on the PAMPA (parallel artificial-membrane permeability assay) approach.

Since the entire 600-plus references includes both article and book titles, the reference list is valuable in itself. By just meandering through the reference list, the reader is likely to spot a few articles that might be worth reading or rereading. The index on the other hand is disappointingly short for a book that covers such a wide variety of subjects. In fact, the reader is more likely to find the location of the discussion of a particular topic by browsing the table of contents than by searching the index.

Overall, Absorption and Drug Development is a useful book for anyone interested in the measurement of physicochemical parameters that relate to drug permeability.

Samuel H. Yalkowsky
College of Pharmacy
The University of Arizona
1703 East Mabel Street
P.O. Box 210207
Tucson, Arizona 85721

JM040012L

10.1021/jm040012l

Drug Bioavailability: Estimation of Solubility, Permeability, Absorption and Bioavailability. Edited by H. van de Waterbeemd, H. Lennemas, and P. Artursson. Wiley-VCH, Weinheim, Germany. 2003. xvii + 579 pp. 18 × 24.5 cm. ISBN 3-527-30438-X. $195.00.

This comprehensive and timely monograph on drug absorption is divided into five sections. Section I focuses on studies of membrane permeability and oral absorption and consists of seven chapters. Chapters cover physicochemical approaches to drug absorption, high-throughput screening of log D and pK_a, high-throughput measurement of permeability profiles, tissue culture methodologies, the use of animals for determining absorption and bioavailabiity, and finally in vivo human permeability studies of the gastrointestinal tract. Section II focuses on drug dissolution and solubility and consists of three chapters on gastrointestinal dissolution and absorption, aqueous solubility in discovery, and factors influencing water solubilities of crystalline drugs. Section III focuses on the role of transporters and metabolism in oral absorption and consists of five chapters including chapters on transporters in the gastrointestinal tract, hepatic transport, gut wall metabolism, and the use of modified cell lines in absorption metabolism studies. Section IV covers computational approaches to drug absorption and bioavailability consisting of six chapters, indicating the rapidly growing importance of computational methods and preclinical drug discovery and development. Sections include the use of polar surface area in predicting absorption, statistical approaches to prediction, ADME properties, and tools toward predicting P-glycoprotein structure−activity relations. Finally, section V, focuses on drug development. The section includes application of the biopharmaceutic classification system now and in the future, a chapter on prodrugs, and a chapter on modem drug delivery strategies, with physiological considerations for orally administered medications.

This monograph is without a doubt the most comprehensive and up to date publication on drug bioavailability available today. It is very highly recommended for researchers wanting to scan various areas of research today in oral drug absorption and will be especially valuable for graduate students or researchers entering the oral drug delivery field. This book is very highly recommended.

Gordon L. Amidon
Department of Pharmaceutical Sciences
College of Pharmacy
University of Michigan
428 Church Street
Ann Arbor, Michigan 48109-1065

JM040011T

10.1021/jm040011t