

Book reviews

Drugs and the Pharmaceutical Sciences

Transport Processes in Pharmaceutical Systems, Gordon L. Amidon, Ping I. Lee, Elizabeth M. Topp (Eds.); Marcel Dekker, New York, 2000, ISBN 0-8247-6610-5, \$225

Gordon Amidon, Ping Lee and Elisabeth Topp have edited a very interesting and comprehensive volume in the 'Drugs and the Pharmaceutical Sciences' series under the title 'Transport Processes in Pharmaceutical Systems'. The book has been written by more than 30 authorities in the field of transport coming from Universities and Industry. Hence, it offers a balanced view from basic principles to applied aspects. The purpose of this book is to discuss those areas of transport phenomena that have direct relevance and application to the pharmaceutical sciences. It will not be of highest importance for readers working in the field of membrane transport from a physiological point of view. The book is divided into four sections. I: Introduction to Transport Processes; II: Biological Transport Processes; III: Transport Processes in Polymer Systems and IV: Heat and Mass Transport. The first two chapters focus on principles and analytical solutions to mass transfer. The next three chapters discuss pharmacokinetics – model structure and transport systems, experimental methods to evaluate diffusion coefficients and the dissolution of pharmaceuticals in simple and complex systems. Part II combines several chapters dealing with intestinal transport; one about cellular mechanisms of biological transport phenomena in the gastrointestinal tract, one about oral drug transport improvement via prodrugs, one on quantitative approaches to delineate passive transport mechanisms in intestinal and renal cell culture monolayers and one predicting oral drug absorption in humans. Only one chapter deals with physiology and pharmacology of drug transport at another important epithelium, the ocular epithelium. One might ask, why transport processes across epithelia such as placenta, blood–brain barrier etc. are largely neglected. The third part can be strongly recommended for students and researchers interested in technologies of drug delivery. It covers transport in polymer systems, hydrogels used for drug delivery, solids that affect transport and osmotic drug delivery systems. Again, carrier-mediated transport processes are underrepresented. There have been many different physiologically occurring carriers cloned recently that can be used for delivery of prodrugs, cationic drugs and others. The last part focuses on heat and mass transfer in freeze drying and hygroscopicity. Clearly, this book of 700 pages cannot be considered a primary source for students and researchers of

membrane transport. Nevertheless, it serves as a textbook and a reference for anyone interested in the mathematical and technological aspects of drug delivery. The quality of some figures is below standard.

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Medical Uses of Statistics

J. Bailar, F. Mosteller (Eds.), 2nd ed., ISBN 0-910133-36-0, \$65

This is a useful book for those who need or want to apply Biostatistics. It is especially suitable for researchers in the medical and pharmaceutical fields.

The book collects mainly articles that have appeared in the *New England Journal of Medicine*, and a few from other sources. The philosophy behind this collection is not to teach statistical calculations but the underlying ideas. It successfully attempts, as I understand it, to give the reader enough insight to know which statistical technique is appropriate for which problem. In addition, the book gives some hints on how to avoid errors and pitfalls before beginning a new study.

Medical Uses of Statistics consists of 23 chapters from different authors, the chapters being sensibly grouped together into five sections. One can read the sections, and even the single chapters, independently of the others. There are enough citations to standard textbooks and to the relevant literature. At this point, however, the only imperfection of the book is revealed: the citations do not go beyond 1992, i.e. the literature of the last 10 years is not incorporated.

To give a short description of the contents: Section 1 is on *Broad Concepts and Analytic Techniques* of statistics. It gives the reader some understanding of the ways of statistical thinking. Section 2, called *Design*, gives an overview of the main methods of clinical studies. Section 3, the largest one with seven chapters, deals with the *Analysis* of