

## Book reviews

### **Respiratory Drug Delivery. Volume V. Program and Proceedings**

R. Dalby, P. Byron and S. Farr (Editors), Interpharm Press, Buffalo Grove, IL, USA, 1996. 434 pages; US\$175.00. ISBN 1-57491-018-3

The publishers have done a wonderful job by bringing out this book of proceedings less than a month after the conference took place. This ensures that the research papers published here are not even one year old. This book contains some 33 conference papers of full length, as well as 47 poster abstracts covering the complete field of modern respiratory drug delivery. Thus, we read contributions about dosing variability in vivo and in vitro, gene delivery and regulation, dry powder inhaler development, pressurized inhaler development, the delivery of macro molecules, new issues and innovations in aerosol science, and the testing of aerosol systems. The authors come from both industry and universities, and present here work of excellent standard that is highly relevant to modern pharmaceutics. At the risk of writing only a very short review of this book, I recommended it to all researchers who are looking for a summary of the present state of research in aerosols. This is a superb volume that is of great use to the researcher in the field.

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### **Pharmacokinetic Analysis—A Practical Approach**

P.I.D. Lee and G.L. Amidon, Technomic, Lancaster/Basel, 1996. ISBN 1-56676-425-4

It is good to have a standpoint, and a new standpoint may reveal a coherent picture, where there was nothing but unstructured detail before. The authors propose the 'time constant approach' as such a unifying view of

pharmacokinetics and biopharmaceutics. Time constants are computed as ratios of AUMCs and AUCs, they are mean residence times. It is impressive to see how this concept is elaborated and applied to a variety of problems.

The scope is outlined by the division into four sections entitled 'Basics and Methods', 'Formulation Factors', 'Absorption, Distribution, Metabolism, and Pharmacodynamics', and 'Special Populations', and the 15 chapters of Sections 2–4 have a common structure with headings 'Introduction', 'Pharmacokinetic Models', 'Case Studies', 'Examples', and 'References'.

Such a rigorous organization can make a book repetitive and dull, but this one is fascinating to read and elucidates many facets of the complex structure it displays.

This is not to say that the reviewer would agree on all points. Some major objections shall be mentioned.

In the introduction the authors propose 'time' as a sensible unit. When pharmacokinetics are discussed from the point of view of 'time', it makes subjects easy to understand. For example, it is more comprehensible to say, 'it takes 3 h for a drug to be absorbed', than to say 'the absorption rate constant of a drug is  $0.333 \text{ h}^{-1}$ '.

As far as the ease of understanding is concerned, this is certainly correct, but, even disregarding numerics, the content of the two statements is not the same. The latter implies that we are talking about a first order process, and the former does not mention, which degree of completion is achieved within 3 h—probably not 100%, and whether there was an initial lag time. In contrast to many processes involved in the kinetics of disposition, the time course of drug release and absorption frequently resists categorization into simple kinetic orders or parametrizable residence time distributions. Still, the shape of the absorption profile may contain valuable information concerning factors limiting the extent of bioavailability.

The value of AUMC/AUC depends to a large extent upon the exact value of the extrapolation of AUMC and hence upon the estimate of the terminal rate constant, which may be difficult to obtain in practice.

The way used here to circumvent this problem is to average plasma level curves from different subjects. In

the eyes of some, including the reviewer, this borders upon malpractice.

Still, this does not invalidate the approach, it is just a transgression of its limitations. The time constant approach may not be a pharmacokinetic panacea, but it is a very interesting and versatile tool. In a future edition, a list of symbols or a statement concerning the policy for choosing main symbols and indexes would be most welcome.

In spite of its price, the book is required reading for the serious pharmacokineticist.

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### **Microparticulate Systems for the Delivery of Proteins and Vaccines**

S. Cohen and H. Bernstein (Editors), *Drug and the Pharmaceutical Sciences*, Vol. 77, Marcel Dekker Inc., New York, 1996. 525 pages. ISBN 0-8247-9753-1

This book contains a number of research and review articles written by various authors. The title of the book tells one pretty well what is to be found; it offers a review of some recent advances in developing microparticulate systems to deliver therapeutic proteins and vaccines. The book starts with the traditional review from *Bob Langer* and colleagues, in this case giving an introduction to the stability of proteins and the principle problems involved in their microencapsulation. The following Chapters 2–5 describe methods of protein microencapsulation including a number of new techniques that avoid the use of organic solvents, e.g. use of supercritical fluids, ionic cross linking of hydrogel-like-polyphosphazenes and use of lipospheres. There follows a chapter describing various spectroscopic methods applied to microsphere characterization. The following 4 chapters then discuss polymeric nanoparticles and liposomes. *Maria Alonso* gives a neat presentation of efficient protein encapsulation in nanoparticles, which is followed by two chapters dealing with 'stealth' systems. There follows an interesting, if very brief, discussion, of polymerised liposomes. The final chapters of the book describe various pharmaceutical applications of microencapsulation technology. There is a description of the pharmacokinetics of microparticulate systems, the potential of micro spheres for oral vaccination is discussed, and the use of gelatine microspheres for gene treatment. Bioadhesive liposomes and modulated protein delivery from microparticulates conclude the book.

This book does not contain much that is new, but presents a good number of typical examples out of the field of microencapsulating proteins. Being a multi-authored work, it reads rather like a book of full-length conference abstracts. There is practically no cross referencing and a certain amount of repetition is found. If you are well up on the literature of microparticulates for proteins and vaccines, you would already be acquainted with most of the work in this volume. The only reason to buy this book would, therefore, be the convenience of having this information in one volume. Otherwise, you could leave it and turn to the original literature.

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### **Biotechnology in Agriculture and Forestry. Vol. 37: Medicinal and Aromatic Plants IX**

Y.P.S. Bajaj (Editor), Springer-Verlag, Berlin, 1996. ISBN 3-540-60597-5

This volume is part of a multi-volume series launched about 10 years ago, with the general idea that specialists working in a particular field of plant biotechnology summarize published and hitherto unpublished results, place it in a broader context and in this way present comprehensive 'biotechnological' monographs of given plant species or genera. The well-edited volume published now comprises 24 chapters dealing with various aspects of plant tissue culture, such as micropropagation and production of valuable natural compounds, in *Agave*, *Anthemis*, *Aralia*, *Blackstonia*, *Catha*, *Catharanthus*, *Cephalocereus*, *Clerodendron*, *Coronilla*, *Gleophyllum* (a fungus!), *Liquidambar*, *Marchantia*, *Mentha*, *Onosma*, *Paeonia*, *Parthenium*, *Petunia*, *Phyllanthus*, *Populus*, *Portulaca*, *Sandersonia*, *Scoparia*, *Serratula*, and *Thapsia*. The subseries title ('Medicinal and Aromatic Plants') is somewhat misleading since plants producing potential food additives others than aromas (e.g. food colours: *Aralia*, *Clerodendron*) as well as plant tissue cultures used as model systems for studying the expression and regulation of secondary metabolism (e.g. *Petunia*, *Portulaca*, *Mentha*) are also considered in this compilation as was done in the previous volumes of the subseries. Although not fully consistent in terms of the quality of the data presented and the conclusions drawn therefrom by the respective chapter authors this compilation is a valuable source of information for all scientists working in plant tissue culture, phytochemistry or the cultivation of medicinal and aromatic plants. Besides the monographs as such, the brief exper-