



Drug delivery and targeting (for pharmacists and pharmaceutical scientists)

Edited by Hillery, A.M. *et al.*, Taylor and Francis, 2001, Price £70.00, 475 pages in hardback, ISBN 0-415-27198-3

At present, drug discovery is going through a paradigm shift from 'new chemical entity' to 'new molecular entity'. With the sequencing of the human genome and ever-increasing involvement of pharmaceutical and biotechnology companies in the development of protein- and peptide-drugs, it is expected that 'novel biotherapeutics', including proteins, peptides, oligonucleotides, vaccines and genes, will be the drugs of the future. These biomolecules often present challenges to a drug delivery scientist because of their large size, instability in biological systems and poor permeability. However, drug delivery technology, the endpoint of which has progressed from a conventional pill to a sophisticated delivery system, offers methods to overcome the problems associated with such molecules.

The book 'Drug delivery and targeting' is a wonderful compilation of recent advances in the field, in which a reasonable emphasis is placed on protein and peptide drugs. It is written as a textbook that could be important to the readers of pharmaceutical and biopharmaceutical sciences. It could also serve as an introductory text and source of references for those who want an introduction to the biopharmaceutical sector. The book is nicely presented, with objectives being given at the beginning of each chapter. To aid better understanding of the subject, colorful illustrations are given where necessary.

Each chapter ends with a series of self-assessment questions to help the reader assess their understanding.

The first section of the book is an *Introduction to Advanced Drug Delivery and Targeting*. It starts with the basic concepts of drug delivery, and provides a brief overview of the terminology used in this field, such as that relating to drug absorption mechanisms and pharmacokinetic processes. A good overview of reasons to develop a new delivery system and their market share is also presented. The review covers different types of delivery systems, routes of administration and applications of rate-controlled drug delivery in implantable systems, along with examples of commercially available systems. A chapter on parenteral drug delivery deals with the different approaches that are available to pharmaceutical scientists working in this field. Various carriers for parenteral drug delivery are clearly explained and future prospects of this field are noted.

Section 2 of the book is devoted to specialized routes of drug delivery, such as oral, transmucosal, transdermal, vaginal, pulmonary and ophthalmic, as well as CNS delivery. The authors discuss these topics in great detail, helping novices assimilate the vast amount of information that is available on these topics.

Future Directions of Drug Delivery and Targeting are discussed in Section 3 of the book. This section begins with the basics of gene therapy, the expression and delivery of these systems, and their clinical applications. The importance of combinatorial chemistry, HTS, proteomics, genomics and bioinformatics in integration of drug discovery and delivery is nicely discussed. The last chapter of the book is devoted to new generation technologies such as the use of prodrugs, biosensors, bioresponsive drug delivery systems, microchips and genetically engineered cell implants.

Although a nice compilation, the publication has a few shortcomings, primarily the lack of an explanatory section on common terms used in drug delivery technologies, which would be extremely useful for readers who are new to the field. The book is a 'broad-based' compilation and, therefore, for details on any of the subjects covered, readers will have to refer to specialized publications.

Sanjay Garg

*National Institute of Pharmaceutical
Education and Research (NIPER)*

Sector 67

SAS Nagar-16062

Punjab, India

tel: +1 91 172 214682

fax: +1 91 172 214692

e-mail gargsanjay@yahoo.com

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tel: +44 (0)20 7611 4165, fax: +44 (0)20 7611 4485

e-mail: joanne.clough@elsevier.com