

### Drug Delivery Systems

Drug delivery is arguably one of the most extensive and dynamic fields of present-day research. It is also one of the most multidisciplinary areas of research, with inputs from medicine, pharmacology, chemistry, biology, biochemistry, materials science, and physics. Consequently, it is not easy to assemble a comprehensive book and to clearly communicate the knowledge to all the professionals of the diverse disciplines involved. In this book the editor has collected together detailed descriptions of selected important technologies used in drug-delivery systems. The book is structured to provide guidelines for specific applications in drug delivery, with emphasis on the techniques involved for the development of drug-delivery systems rather than on detailed descriptions of physicochemical properties or recent theories. The reader interested in the latter aspects can find further information in the list of references provided at the end of every chapter.

The chapters are well documented and written in clear language for the specialists of each discipline involved. However, the chapters are not grouped by topics or even slightly related, and the index does not compensate for this drawback by cross-referencing between them.

In accordance with the layout of the series *Methods in Molecular Biology*, most of the chapters begin with a brief description of the fundamental aspects, followed by the methods used to prepare or evaluate the drug-delivery system under discussion. The book starts with an extensive introduction that discusses many different drug-delivery approaches and their adoption by the pharmaceutical industry. However, only a few of the technologies introduced there are reviewed in the main body of the book. Moreover, some of the references in the introduction might not be readily available for all readers.

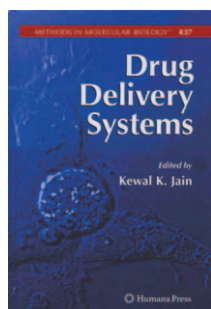
The second chapter is a succinct description of the role of virus capsids in gene transfer, including complete protocols for the production of adeno-associated viral vectors. The third chapter reviews small interfering RNA delivery systems, but does not cover the methodology. In Chapter 4, chronic drug delivery to the brain through a catheter is explained, with practical details. In Chapter 5, the authors discuss transdermal drug delivery, including the skin abrasion method. In Chapter 6, pulmonary release of peptides is described, and this is followed in Chapter 7 by a detailed description of the preparation of protein particles for lung delivery. Chapter 8 gives a meticulous description of an in vitro model to test drug transport through the blood–brain barrier, which is exemplified by an

analysis of the transport of a nontoxic mutant protein of the diphtheria toxin. Chapter 9 is a brief summary of the basic methods for the preparation of liposomes loaded with an anticancer drug. Chapter 10 is merely a review of the state of the art in the use of pH-sensitive nanoparticles for the delivery of drugs to cancer patients; the design of such drug-delivery systems is not included. Finally, Chapter 11 describes examples of oral drug delivery using monolithic matrices for extended drug release.

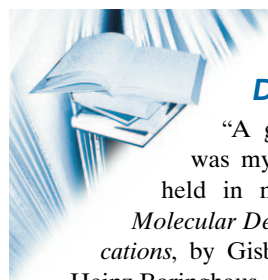
This volume could serve as a source of information for the development of novel drug-delivery systems, not only for scientists working in academia but also for executives in charge of research and development in companies. Nevertheless, it probably will not be useful as a straightforward tool for the rational design of more advanced drug-delivery formulations by establishing structure–activity performance relationships. However, the reader seeking solutions to a specific practical problem that comes within the scope of the highly topical chapter titles will obtain a quick overview of the current state of knowledge and a concise description of the methods used. The value of the book will depend on whether the interests of the reader are as diverse as the contents.

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### Molecular Design

“A good book for teaching” was my impression when I first held in my hand the new book *Molecular Design: Concepts and Applications*, by Gisbert Schneider and Karl-Heinz Baringhaus. On 262 pages, the authors

introduce the reader to the complex field of creating novel molecules with desired biological effects. Molecular design is a highly interdisciplinary field, touching areas of science that range from medicine, pharmacology, chemistry, and biology to computational disciplines such as bioinformatics and chemoinformatics. There are several books available that deal with closely related topics such as molecular modeling and chemoinformatics applications, but books that aim to cover the whole process of molecular design for pharmaceutical applications are rare. Twelve years after the famous book *Wirkstoffdesign* by Böhm, Klebe, and