

Book Reviews

Biopharmaceutical Drug Design and Development. Second Edition. Edited by Susanna Wu-Pong and Yon Rojanasakul. Humana Press, Totowa, NJ. 2008. x + 375 pp. 15.5 × 23.5 cm. ISBN 978-1-58829-716-7. \$135.00.

The first edition of the book, published in 1999, was reviewed in the *Journal of Controlled Release and Pharmaceutical Science and Technology Today*. These previous reviews were generally favorable. The core strengths of the first edition of this book remain in place for the second edition. The book comprises 16 chapters written by 24 authors from academic and industrial laboratories in the U.S. The book is suitable for a wide audience of industrial and academic pharmaceutical scientists interested in a broad introduction to biopharmaceutical technology within the context of drug design and development. Book chapters include a gentle introduction to biotechnology, followed by topics that cover the human genome project, bioinformatics, DNA microarrays, pharmacogenetics, and transgenics. Book chapters discussing various methods for gene delivery and stem cell technology provide appropriate and necessary updates from the first edition of this book. Other chapters discuss small nucleic acids, innate immunity, macromolecular drug delivery, and molecular modeling. The book nicely concludes with chapters on biologic drug approval at the FDA and a discussion on follow-on protein products. Random spot checks on a select number of cited works in this book revealed them to be accurate.

Overall, the book is well written with an excellent nine-page index. The chapters are generally well illustrated. A complete alphabetical listing of all authors listed by last name can be found after the index. This book provides a reasonable and necessary update to the first edition, and it would be a valuable addition to industrial and academic libraries.

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Carbohydrate Chemistry and Biochemistry. Structure and Mechanism. By Michael L. Sinnott. Royal Society of Chemistry, Cambridge, U.K. 2007. xiv + 748 pp. 16 × 24 cm. ISBN 9780854042562. £59.00.

It is refreshing to see such a broad and complex topic covered by a single, well-qualified, and lucid author. The result is a cohesive treatment of carbohydrate chemistry. The discussion of historic and systematic nomenclature and the description of various kinds of isomerism, including D,L-, d,l-, R,S-, anomers, enantiomers, and diastereomers, is excellent. Conformational analysis is similarly well done. There are 140 pages devoted to oligo- and polysaccharide structure and conformation and 150 pages on enzymatic glycosylation. Three comprehensive chapters cover chemical reactions of carbohydrates. The text is illustrated throughout with nicely drawn structures, and it contains few errors. Personally, I would have liked to see more treatment of the polyols (sugar alcohols); there are two pages on cyclitols (inositol and others) but nothing on acyclic ones (sorbitol, mannitol, etc.). But these are not, strictly speaking, carbohydrates, so I defer to the author's choice.

Unfortunately, the index is maddening. To illustrate: I wanted a simple, clear definition of the term "reducing sugar". The earliest index entry points to page 60 in Chapter 2. But this produces no definition. Rather, it refers to a table of reducing sugars on page 14 (Chapter 1). A careful reading reveals use of the term as early as page 3, but there is no definition. On several other occasions, I used the index to look for topics I had seen previously in the book, and I could not locate them.

The index notwithstanding, this is an excellent treatment of carbohydrate chemistry. It belongs in libraries and on the bookshelves of carbohydrate chemists and biochemists.

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