



Defines the Biopharmaceutical Industry



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BOOK REVIEW

Rader, R. *BioPharma: BioPharmaceutical Products in the US Market*, second edition; Biotechnology Information Institute: Rockville, MD, 2003 (www.bioinfo.com).

f vou are interested in the biotechnology market and are looking for a comprehensive source for product information, history, and background, then BioPharma: Biopharmaceutical Products in the US Market may be for you. Ronald Rader has done a very thorough job of collecting information, in the form of product monographs, for all the biopharmaceutical products in the US marketplace, whether currently marketed or not. He provides information from many sources in one readily accessible volume. Sorting the products by their nature - recombinant DNA products, monoclonal antibodies, vaccines, toxins, enzymes, cells and tissue products, insulins, blood products, and the ubiquitous "others" - provides a relatively convenient format. A useful addition is more than 100 pages of indices and crossreferences. This format should be particularly relevant for market analysis, business development, and sales and marketing personnel. Rader also refers readers to www.biopharma.com, where a supplemental online database can be used to support their search needs.

What makes this book particularly useful - and where Rader has done an excellent job - is going beyond straightforward product information. Each product grouping is preceded by an explanation and background of the technology that led to the product's development, a historical and scientific review, and a discussion of how intellectual property rights (patents) have affected the particular area. For example, in the section on monoclonal antibodies, Rader reviews not only the technology to produce monoclonals and how one would actually produce them in the lab, but he also describes immunoglobulin structure, Kohler and Milstein's work, humanization of monoclonals, nomenclature, and the current state of intellectual property covering this area.

Beyond this, the monographs contain a wealth of information. Although not in every entry, you can find information about mode of action, molecular structure, commercial configurations, and regulatory history and status as well as original reference citations, background medical information, a clinical trials overview, market size estimates, and current pricing. In some cases, he includes fairly detailed manufacturing information from master cell bank production through purification outlines to the size of bioreactors. He covers the technological and corporate aspects of intellectual property, providing references to the actual patents, any legal wrangling that may have occurred between parties, and court rulings/interpretations where available. I found it amazing how much information there was. Unfortunately, you must read through all of the monographs to find out which product entries contain which information and collate it yourself.

Impressive as the collection of information is, readers are always concerned about the timeliness, thoroughness, and accuracy of the data. In this area Rader has done a particularly good job. I found citations that were as recent as February 2003. Information regarding products my own company produces was accurate and up to date, as was true for others that I am intimately aware of. Editing was very good with minor spelling errors, truncated words, and some "copy and paste" font artifacts.

If you would like to learn about biotechnology, are new to the industry, a student, or in a business serving the industry, this book provides a ready reference and a wealth of information. Anyone interested in the commercial side of the biotechnology industry in the United States today will benefit from this book. It is a book not easily read, but well worth the effort.