

This final volume includes a detailed index (46 double-column pages) that facilitates location of information. Attached to the inside back cover is a supplementary CD-ROM disk with a PowerPoint presentation that the editor has used to share the fascination of biotechnology with students. It includes vivid video animations such as those showing the entire process from DNA unwinding in the nucleus through transcription into mRNA to the expression of a biopharmaceutical. By focusing on key aspects, the animations help one to understand such complex processes.

The next edition, which is intended to be even more comprehensive, is already in preparation, and Knäblein asks readers to suggest additional topics and content and to visit the biotechnology hub at his website <http://www.get-gps.net> to discuss current trends with a particular Global Pharma Specialist from a worldwide network.

I heartily recommend this authoritative, comprehensive reference to this new, exciting field dealing with the entire broad range of available biopharmaceuticals. It will be invaluable to biotechnologists, clinicians, physicians, pharmacists, pharmaceutical chemists, molecular biologists, medicinal chemists, and anyone working in the biotechnological and pharmaceutical industries or in medicinal institutes. It should also be useful for undergraduate and graduate students, postdoctoral fellows, and researchers seeking quick, clear, and concise ideas on topics outside their areas of specialization. It should also find a place in academic, industrial, and governmental libraries.

George Kauffmann
California State University, Fresno (US)

The Adrenergic Receptors in the 21st Century

Edited by Dianne M. Perez.

Humana Press, Totowa 2005. 416 pp., hardcover \$ 165.00.—ISBN 1-58829-423-4

The understanding of adrenergic receptors (AR) was initially driven by drug manipulation and tissue pharmacology. Now, molecular biology and the cloning of the receptors have completely revised the scientific approach to the structure, function, and pathophysiology of these receptors. To write a comprehensive book on this topic is a mundane task and requires many dedicated specialists. Dianne Perez has assembled a number of important contributors to the research area and grouped the 15 chapters into six parts. D. B. Bylund provides a brief historical *Perspective*, which is followed by Part II: Structure–Function. The chapter on *Ligand Binding, Activation and Agonist Trafficking* suffered most from an inadequate layout and poor graphical quality of the figures. Many graphics were carefully composed in colour, but here they appear in black and white. This makes them sometimes dull, sometimes hard to read. The compressed page layout with small margins and no breaks between sections is a real nuisance. More importantly, many chemical structures in this chapter are incorrect. Five structures out of 25 in Figure 4 are wrong. Two enantiomers are labelled (–)-epinephrine, and there is no link to the common name by which this is known. There is also an unusual use of italic annotation for amino acids (Table 1). Furthermore, references to the patent literature are missing, thus this chapter is far from comprehensive. Chapter 3: *New Signal Transduction Paradigms* addresses receptor dimerization and localization. A single figure is used to explain G protein-coupled receptors, their dimerization, and the associated signal transduction. Again, this figure suffers from poor layout and a “hand-crafted” chemical structure. The oligome-

rization of GPCRs is missing altogether. The colour plates between Parts III and IV give an impression of what the book could have been and how much effort the authors have taken. Chapter 4 addresses the caveolae involvement in the *Regulation of the Cellular Localization and Trafficking of the Adrenergic Receptors* and is reasonably up to date. The confocal imaging of aortic smooth-muscle cells appears twice: on page 117 in black and white and some 50 pages later as one of the five colour plates. The *Clinical Medicine* in Chapter 5 consoled me. It is a concise overview, it highlights the problems and limitations, and finally makes a point for the experienced medicinal chemist in academia or the pharmaceutical industry. The following two chapters on visualization and localization of the adrenergic receptors by fluorescent-tagged ligands and receptors are comprehensive; they cover the literature up to 2004. The mouse models are addressed in five chapters grouped into Part IV. The topics are: α_1 -AR and α_2 -AR knockouts, β -AR knockouts, and AR overexpression and gene therapy. The positioning of pharmacogenomics in the closing Part V reflects the long history of AR research, which pharmacogenomics entered at a rather late stage in comparison with other receptors. The summarized polymorphisms, phenotypes, and their clinical relevance provide fertile ground for future individualized therapies. The necessary gene profiling is addressed in the last chapter: microarray analysis of novel AR function.

Medicinal chemists have to cherry pick from the chapters. Therefore, the book may not find the intended readership through this journal. On the other hand, many MDs, biologists, and pharmacologists will find the book rather appealing, as the receptor class is involved in numerous cardiovascular and pulmonary diseases.

Boris Schmidt
TU Darmstadt (Germany)
DOI: 10.1002/cmdc.200600132