

Annual Review of Biochemistry. Volume 78. Edited by Roger D. Kornberg, Christian R. H. Raetz, James E. Rothman, and Jeremy W. Thorner. Annual Reviews, Inc., Palo Alto, CA. 2009. x + 1056 pp. 19 × 24 cm. ISBN 978-0-8243-0878-0. \$234.00.

Volume 78 of the *Annual Review of Biochemistry* series begins with two prefatory chapters, each describing the scientific accomplishments and life story of a prominent researcher, and these are followed by 33 reviews on significant developments in the field of biochemist. In addition, Volume 78 includes a cumulative index of contributing authors and chapter titles for Volumes 74–78. Only very minor changes were noted compared to the two previous volumes; these include an increase in the number of prefatory chapters and themed sections.

This Volume features four sections on various topics, specifically, “Biology of Disease”, “Ubiquitin-Mediated Protein Regulation”, “Gene Expression”, and “Lipid and Membrane Biogenesis”. Each section contains four to six chapters relevant to the particular topic. For example, “Biochemistry of Disease” features two reviews on biochemical mechanisms of bacterial and viral drug resistance. In addition, Volume 78 includes a larger section entitled, “Recent Advances in Biochemistry”, featuring 12 reviews on a diverse array of topics, including enzymology, structural biology, and modern techniques in biochemistry.

While the focus of the reviews is basic biochemistry, numerous chapters relate the material covered to human disease and discuss applications of the work, including drug targets. Therefore, this Volume will be of utility to those in a variety of biomedical fields, including medicinal chemistry and pharmacology.

Overall, the chapters are lucid and well-composed such that readers with only a basic knowledge of biochemistry will gain understanding and insight. Each review commences with an abstract, keywords, and a detailed contents section and concludes with a concise list of important summary points and/or future issues. The body of the chapters is readily navigated thanks to excellent organization, helpful definitions, acronym descriptions in the margin, and clearly marked sections/topics. In addition, each review includes numerous colorful figures and schemes with adequately detailed legends that illustrate salient points. While all chapters feature a comprehensive literature cited section, many incorporate margin notes from the authors highlighting pivotal references that may be of interest to the reader. Such impressive characteristics comprise an exceptional reference for both researchers and educators.

In summary, Volume 78 is another outstanding addition to the long-running *Annual Review of Biochemistry* series. Given the excellent writing quality and superb chapter format (e.g., defined sections, detailed figures, summary points), this book will prove to be a tremendous investment and resource for those engaged in various aspects of biomedical research.

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Textbook of Drug Design and Discovery. Fourth Edition. Edited by Povl Krosgaard-Larsen, Kristian Stromgaard, and Ulf Madsen. CRC Press, Boca Raton, FL. 2010. xv + 460 pp. 18 × 25 cm. ISBN 978-1-4200-6322-6. \$79.95.

The fourth edition of the *Textbook* prominently focuses on the revolutionary opportunities that genome-era molecular biology affords for the advancement of academic and industrial medicinal chemistry. The book underscores the importance of integrating complementary biomedical disciplines most efficiently to exploit strategies to identify biomacromolecular targets, find hits, generate lead compounds, rationally optimize structural features, and then to translate into new drug entities. The *Textbook* provides the blueprint for pathophysiological data to yield the chemical language of drug discovery.

This latest edition is very substantially revised from the 2002 third edition, both in content and authorships. The first 10 chapters address current aspects of ligand–receptor site theory, stereochemistry, molecular biology, prodrugs, computational methods, and pharmacophore guided structure–activity investigation. The past decade’s high expectations for combinatorial synthesis are seen to give way to more sophisticated biophysical approaches to drug discovery. These include new high-throughput technologies, diversity-oriented synthesis, fragment-based screening, and therapeutics based on stabilization of biomacromolecular backbones or unnatural modifications of posttranslational products. The medicinal chemistry cornerstone, natural product drug development, is now aided by novel instrumental techniques to avoid nuisance compound masking pharmacological activity. The last 15 chapters focus on specific biological targets or diseases, where the molecular pharmacology of neurotransmitter receptor subtypes, signal transduction pathways, and ion channel function all receive in-depth and laudable consideration.

As consistent with a textbook format, primary literature is not cited. Each chapter ends in a brief “Further Reading” bibliography containing seminal works or timely reviews generally limited to literature prior to 2008. The index serves well although it is noted that this book is not intended to provide an encyclopedic inclusion of mainstay drugs. This excellent textbook would have been further strengthened had a chapter on pharmacogenomics and personalized medicine been included. Suitable readership includes advanced chemistry undergraduates and graduate students in any biomedical science as well as seasoned scientists seeking a foundational understanding of contemporary medicinal chemistry and molecular pharmacology.

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