

Book Reviews

Encyclopedia of Molecular Biology and Molecular Medicine. Volume 1. Edited by Robert A. Myers. VCH Verlagsgesellschaft mbH, Weinheim, Germany. 1996. xiii + 462 pp. 22.5 × 28.5 cm. ISBN 3-527-28471-0. DM 490.00.

This is the first volume of a six-volume encyclopedia of molecular genetics and the molecular basis of life; it covers topics from A (Achilles' Cleavage) to C (Cytoskeleton–Plasma Membrane Interactions). Each of the articles in this initial volume begins with a concise definition of the subject and its importance and is followed by the body of the article and references for further reading. All subjects are presented on a first-principles basis, including detailed figures, tables, and drawings to illustrate atomic and structural features. The articles are self-contained and include a key word section that provides definitions to assist the scientist or student who is unfamiliar with the specific subject area.

The overall objective of the six-volume encyclopedia, which is planned for completion within a time frame of 15 months, is to provide a single reference source for the molecular basis of life, disease diagnosis, and therapy and simultaneously to describe the techniques for understanding, modifying, manipulating, expressing, and synthesizing biological molecules. The clarity and quality of the 51 articles in *Volume 1* suggest that these overall objectives will be met by the 300 articles that will comprise the six-volume encyclopedia.

This multivolume reference should be of value to students and scientists in many fields. Coverage of topics included in the first volume indicates that the encyclopedia will provide a comprehensive introduction to molecular biology and genetic medicine. Hopefully, a complete index will be included to enable topic location within the six-volume set.

Staff

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Ocular Therapeutics and Drug Delivery: A Multidisciplinary Approach. Edited by Indra K. Reddy. Technomic Publishing Co., Inc., Lancaster, PA. 1996. xxv + 585 pp. 16 × 23.5 cm. ISBN 1-56676-213-8. \$89.00.

Ocular pharmacology has its roots in antiquity, and hundreds of prescriptions for ocular disease were already known by the time of the Hippocratic revolution 2500 years ago. Today, worldwide annual sales of ophthalmic pharmaceutical products amount to billions of dollars, and research and development activities in this field are correspondingly intensive. Thus, a book on ocular therapeutics and drug delivery is of considerable interest, even though several recent monographs on ophthalmology, ocular pharmacology, ocular toxicology, and drug delivery contain similar material. Editor

Reddy notes that "(s)everal books...cover one or two aspects of the multidisciplinary fields...(t)he uniqueness of this volume...lies in its comprehensive treatment..." He has assembled a group of more than 30 authorities from academic, industrial, and government laboratories to produce 19 chapters directed toward this goal.

The book is divided into five parts: Overview, Basic Principles and Methodology; Pathopharmacology and Clinical Applications; Chemical/Biochemical Approaches to Ocular Drug Delivery; Formulation and Drug Delivery Considerations; and Industrial and Regulatory Considerations. Obviously, an attempt to discuss these broad areas in the space of less than 600 pages means that some topics will receive short shrift. In the present case, anti-infectious agents, immunomodulatory drugs, and vitreous substitutes, for example, merit only modest attention. By contrast, chapters that consider drug delivery are quite comprehensive. Chapters 10–12, which review prodrug approaches, are of particular interest to the medicinal chemist.

Almost every presentation is thoroughly documented with more than 100 up-to-date references. A useful index is provided, and the volume is well produced and reasonably priced. The book contains a wealth of useful information for workers in this field and should be favorably considered for acquisition both by individuals and by institutional libraries.

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Platinum and Other Metal Coordination Compounds in Cancer Chemotherapy. 2. Edited by H. M. Pinedo and J. H. Schornagel. Plenum Press, New York. 1996. x + 357 pp. 17 × 26.5 cm. ISBN 0-306-45287-1. \$85.00.

This volume presents the proceedings of the 7th International Symposium on Platinum and Other Coordination Compounds in Cancer Chemotherapy that was held in Amsterdam, The Netherlands, Mar. 1–4, 1995. It provides an up-to-date and comprehensive overview of this important class of anticancer agents that ranges from synthesis and molecular pharmacology to clinical pharmacology and clinical investigations. Important topics covered in the 33 chapters, generally 10–15 pages in length, are presented in eight sections: Synthesis and Activity of Platinum Compounds, Clinical Pharmacology, Biochemistry and Molecular Pharmacology, Clinical Studies, Non-Platinum Metal Complexes, How Does Platinum Kill the Cell, Controversy Section: Cisplatin vs. Carboplatin, and Resistance. Each chapter includes an extensive list of references, and the book concludes with a comprehensive subject index. Although the book is a compilation of articles prepared

by a large number of experts in the field, the consistency and overall quality are excellent.

This timely and comprehensive summary of studies on platinum and related coordination compounds in cancer chemotherapy is recommended for all concerned with this important field. Medicinal chemists, pharmacologists, molecular biologists, clinicians, and others will find this useful reading.

Staff

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Metal Ions in Biological Systems. Volume 32. Interactions of metal ions with nucleotides, nucleic acids, and their constituents. A. Sigel and H. Sigel, Eds. Marcel Dekker Inc., New York. 1996. xxxix + 814 pp. 16 × 23.5 cm. ISBN 0-8247-99549-0. \$225.00. **Metal Ions in Biological Systems. Volume 33. Probing of nucleic acids by metal ion complexes of small molecules.** A. Sigel and H. Sigel, Eds. Marcel Dekker Inc., New York. 1996. xli + 678 pp. 16 × 23.5 cm. ISBN 0-8247-9688-8. \$195.00.

These two volumes continue the Metal Ions in Biological Systems series. Both are large multiauthor texts that address, to varying extents, most aspects of metal–nucleic acid chemistry. Similar to previous contributions from this series, they target a readership that is already somewhat conversant with the subject in hand and provide a vehicle for accessing appropriate primary literature. It is this reviewer's opinion that this series performs best when the volumes engage a smaller number of authors, who subsequently provide a broad scholarly survey of specific areas. The alternative is for a series of shorter and more parochial accounts that often seem to be used as a vehicle for off-loading ideas, theories, and data that could not be developed elsewhere. Unfortunately, these two volumes contain too many articles that suffer from the latter drawback. Another problem that arises with such a multichapter book is the problem of identifying themes that run through the text. These might have been demarcated by subsection headings between groups of chapters and would be of particular value for lay readers seeking to learn about a particular aspect of metal–nucleic acid chemistry. On a related point, the subject matter of several chapters appears to bear little direct relationship to the stated themes of the volumes.

On a more positive note, the volumes do contain several substantive chapters that will provide readers with genuine insight on metal–nucleic acid chemistry and newer areas that interface with cell biology. Also, these compendia bring together a large amount of reference and resource material that will enable the interested reader to go off and digest the original literature. The index appears to be solid, although too many entries are redundant, since the number of page references given is so great as to be almost useless [for example, 72 individual page references to manganese(II)]; some subindexing would have greatly improved matters.

In conclusion, while these texts will undoubtedly be of value to the specialist seeking ready access to pertinent literature, it does not serve as well in providing an overview of the various aspects of metal–nucleic acid chemistry. They are unlikely to be a useful purchase for individual readers, although the price of the texts almost guarantees that they will be purchased, almost exclusively, by library adoption.

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TOXICOLOGY: Principles and Applications. Edited by Raymond J. M. Niesink, John de Vries, and Manfred A. Hollinger. CRC Press Inc., New York. 1996. 1284 pp. 22.5 × 28.5 cm. ISBN 0-8493-9232-2. \$125.00.

In 1989, EUROTOX, an organization of European toxicologists and national toxicological societies, recognized the need for a high-quality textbook encompassing important areas of toxicology which could be used as a teaching tool both for formally instructed classes as well as for self-education and distance learning. *TOXICOLOGY: Principles and Applications* is the result of a collaborative effort between EUROTOX and The Netherlands Open University and represents a well-written, comprehensive treatise of basic toxicological principles and applications translated and edited from course books used to teach toxicology in The Netherlands. The design of the text emphasizes "supervised self-study" of individual toxicology units. Each study unit (40 in total) contains a table of contents, an introduction, a learning core, a summary, a self-test, and a feedback section. The textbook highlights four major themes: fundamental principles of toxicology, molecular aspects of toxicology, organ toxicology, and applications of toxicology. These themes are further divided into six parts. Part 1 discusses qualitative and quantitative aspects of exposure to xenobiotics, including toxicokinetic and dose–time effects on absorption, distribution, biotransformation involving both activating and detoxification pathways, and elimination of xenobiotics. Part 2 addresses molecular aspects of toxicity including the underlying mechanisms responsible for cellular toxicity and death following xenobiotic exposure. Structure–activity relationships relating chemical structure to toxicity as well as the influence of exposure to mixtures of structurally and functionally diverse chemicals and eventual toxicological manifestations are described. Genetic toxicology, with particular emphasis on mechanisms and screening methodology for mutagenicity and carcinogenicity, and cancer risk evaluation also receive considerable discussion in Part 2. The activation of proto-oncogenes, role of oncogenes and tumor suppressor genes, and alterations in normal cellular signal transduction pathways as mediators of toxicological processes, including cancer development, are discussed as well. Part 3 (Study Unit 14) is an overview of safety

standards and legislation concerning harmful substances and presents a description of the procedures involved in the establishment of safety standards, the agencies involved, and how toxicity testing is carried out. Parts 4 and 5, which comprise Study Units 17–35, deal with specific organ toxicity, focusing on those organs involved in absorption and elimination and organs involved in maintaining homeostasis. Pulmonary, gastrointestinal, hepatic, and renal toxicity receive considerable discussion as organ systems involved in absorption and elimination, while the pathological and methodological aspects of cardiovascular, immunological, endocrinological, and neuronal reproductive toxicology are equally well treated. The final part, composed of six study units, covers various aspects of nutritional, ecological, medical, clinical, and occupational toxicology. The concluding sections of the book include an achievement test which allows readers to assess their overall understanding of the subject matter following completion of the book, a full glossary and index, a chemistry appendix, and a list of commonly used abbreviations of toxicology.

In general the book brings together, under a single cover, a very well written, clearly illustrated compilation of our current understanding of the basic principles and applications of toxicology in each of the major organ systems. Although the book has been targeted as an introductory course text for advanced undergraduate and graduate students, the textbook represents an indispensable reference book with many of the most recent literature references for graduate biologists, chemists, physicians, and veterinarians who desire a convenient information source of basic principles of toxicology.

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Books of Interest

Vaccine Protocols. Methods in Molecular Medicine. Edited by Andrew Robinson, Graham H. Farrar, and Christopher N. Wiblin. The Humana Press, Totowa, NJ. 1996. x + 317 pp. 17 × 23 cm. ISBN 0-89603-334-1. \$89.00.

Metabolic Regulation. A Human Perspective.

By Keith N. Frayn. Portland Press Ltd., London. 1996. xviii + 265 pp. 17.5 × 24.5 cm. ISBN 1-85578-048-8. \$30.00.

Tamoxifen. Beyond the Antiestrogen. Edited by John A. Kellen. Birkhauser Boston, Cambridge, MA. 1996. x + 377 pp. 16 × 24 cm. ISBN 0-8176-3842-3. \$94.50.

Neurophysiological Basis of Cerebral Blood Flow Control: An Introduction. Edited by S. Mraovitch and R. Sercombe. John Libbey & Co. Ltd., London. 1996. 408 pp. 20 × 24 cm. ISBN 0-86196-272-9. £40.00.

Blood Substitutes. New Challenges. Edited by Robert M. Winslow, Kim D. Vandegriff, and Marcos Intaglietta. Birkhauser Boston, Cambridge, MA. 1996. 208 pp. 16 × 24 cm. ISBN 0-8176-3878-4. \$69.50.

College Chemistry Faculties 1996. Tenth Edition. Project Management: David N. Orloff. American Chemical Society, Washington, D.C. 1996. vii + 363 pp. 21.5 × 28 cm. ISBN 0-8412-3300-4. \$74.95.

The Merck Index. 12th Edition. An Encyclopedia of Chemicals, Drugs and Biologicals. Edited by Susan Budavari. Merck & Co., Inc., Rahway, NJ. 1996. xviii + 2543 pp. 18.5 × 25.5 cm. ISBN 0911910-12-3. \$45.00.

Biofunctional Membranes. Edited by D. Allan Butterfield. Plenum Publishing Corp., New York. 1996. xi + 294 pp. 17 × 26 cm. ISBN 0-306-45281-2. \$89.50.

Chemometric Methods in Molecular Design. Volume 2. Edited by Han van de Waterbeemd. VCH Publishers, Weinheim, Germany. 1995. xix + 359 pp. 17.5 × 24.5 cm. ISBN 3-527-30044-9. DM 188.00.

Monosaccharides. Their Chemistry and Their Roles in Natural Products. By Peter Collins and Robin Ferrier. John Wiley & Sons, Inc., New York. 1995. xix + 574 pp. 15 × 23 cm. ISBN 0-471-95343-1. \$39.95 (pbk).

Cytochrome P450. Structure, Mechanism, and Biochemistry. Second Edition. Edited by Paul R. Ortiz de Montellano. Plenum Publishing Corp., New York. 1995. xii + 652 pp. 16 × 23.5 cm. ISBN 0-306-45141-7. \$125.00.

Neurotherapeutics. Emerging Strategies. Edited by Linda M. Pullan and Jitendra Patel. The Humana Press, Totowa, NJ. 1995. x + 434 pp. 16 × 23.5 cm. x + 434 pp. 16 × 23.5 cm. ISBN 0-89603-306-6. \$125.00.

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