

## Book Reviews

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**Current and Future Trends in Anticonvulsant, Anxiety, and Stroke Therapy. Progress in Clinical and Biological Research. Volume 361.** Edited by Brian S. Meldrum and Michael Williams. Wiley-Liss, New York. 1990. xviii + 555 pp. 16 × 23.5 cm. ISBN 0-471-56869-4. \$142.00.

This book is the result of series of symposia that focused exclusively on the drug-discovery process. This Princeton Drug Research Symposium was held in Princeton, NJ, in May 1989. It was directed specifically toward three areas of central nervous system research having common molecular mechanisms. The benzodiazepines link anticonvulsants and anxiolytics, whereas the excitatory amino acid antagonists bridge anticonvulsant and antiischemic agents. The symposium apparently was extremely well organized and this is clearly reflected in the book. Thus, each section is introduced with an overview which correlates existing trends in therapy and the various mechanistic approaches. The four main sections in the book address anticonvulsant therapy, anxiety therapy, stroke therapy, and novel compounds.

Research presented in each section by recognized leaders in the field is very timely. This is illustrated by the description of recent studies with MK 801, the most researched compound of 1988–1989 and also by up-to-date presentations on lazarets, serenics, and brain-antiedema agents. The section on novel compounds is particularly significant. In this section most of the recently identified centrally acting therapeutic candidates are discussed in detail. Useful author and subject indexes are included, and each presentation is thoroughly referenced.

Medicinal chemists, as well as scientists in other disciplines, concerned with central nervous system research particularly relative to anticonvulsant, anxiety, and stroke therapy will find this a useful and informative reference.

Staff

**Problems and Wonders of Chiral Molecules.** Edited By M. Simonyi. Akadémiai Kiadó, Budapest. 1990. x + 400 pp. 17 × 24 cm. ISBN 963-05-5881-5. \$48.00.

In this book exciting, clearly written accounts and reviews of stereochemical problems and their interpretation are presented for three broadly defined categories, namely, chemistry and biochemistry; drugs, medicinal chemistry, and pharmacology; and industrial aspects. Of necessity each of these sections covers a wide range of subjects. Following a fascinating forward written by the editor, the chemistry and biochemistry section treats stereospecific reactions on nonchiral substrates in biology, left-handed RNA oligomers, the role of 11- $\beta$ -hydroxyl in glucocorticoid hormone action, steric course and mechanism of enzymic reactions, quantitative interpretation of stereoselectivity in biochemical reactions, a CD study of optically active azaheterocycles, the homochiral versus heterochiral packing dilemma, and chiral recognition in the light of molecular associations. In the drugs, medicinal chemistry, and pharmacology section, following introductory chapters on "Signs: The Code of Classification" and "Chromatographic Analysis of Drug Enantiomers", are presented fascinating accounts of stereochemical aspects of gossypol, coumarin anticoagulants, ibuprofen, agonists and antagonists of central glutamic acid receptors, bicuculline salts, chiral discrimination by dopamine receptors, (-)-deprenyl, 1,4-benzodiazepines, and binding to the GABA<sub>A</sub> receptor. This section concludes with chapters on "Ultrafiltration of Racemates: How to Detect the Enantiomer?" and "Resolution by Immobilized Serum Albumin". The industrial aspects section is comprised of two informative chapters treating  $\beta$ -adrenergic blockers, properties of the enantiomers, and a review of the industrial synthesis of optically active compounds. Adequate author and subject indexes facilitate the

location of specific topics.

All students of stereochemistry in biology will find this book enjoyable, educational, and important reading.

Staff

**Fluorine-18 Labeling of Radiopharmaceuticals. Nuclear Science Series.** By Michael R. Kilbourn. National Academy Press. Washington, DC. 1990. xi + 149 pp. 21.5 × 28 cm. NAS-NS-3203 (paperback).

This is a review of the radionuclide fluorine-18, with particular emphasis on its applications in the preparation of radiopharmaceuticals for Positron Emission Tomography (PET). Methods of production of fluorine-18 using charged particle accelerators and nuclear reactors are briefly reviewed. The discussion of organic syntheses with fluorine-18 is broadly separated into two areas, electrophilic and nucleophilic <sup>18</sup>F-fluorination. In each section, the general synthetic strategies are discussed and illustrated with examples from the literature. Finally, detailed histories of development for five representative clinically used fluorine-18 labeled radiopharmaceuticals are presented. To provide rapid and convenient access to the fluorine-18 radiochemical literature, a table of 300 fluorine-18 compounds and their literature citations is included in this thoroughly indexed and referenced book.

A limited supply of the monograph is available free of charge from the Board on Chemical Sciences and Technology, National Research Council, 2101 Constitution Avenue, N.W., Washington, DC 20418. This book will be of significant interest to all scientists who utilize PET.

Staff

**Liposomes. A Practical Approach.** Edited by R. R. C. New. In Practical Approach Series. Series editors D. Rickwood and B. D. Hames. Oxford University Press, New York. 1990. XVI + 301 pp. 15.5 × 23 cm. ISBN 0-19-963077-1. (Paperback) \$45.00.

With the growing interest in the use of liposomes in biological, biochemical, and medical research and their many applications as biotechnology products, this book is intended both as a compilation of methods which may act as a useful reference source for workers already in the field of liposomes, and as a simple guide to workers outside the field who are wondering whether liposomes might have some application to their own speciality, and if so, what sort of liposomes are best to use. In spite of several books written about liposomes, this is the first one that can be used as a practical manual for the laboratory worker, since it concentrates on methodology as the means of classifying the different areas of the liposome subject, including a detailed step-by-step technical description how to make, characterize, and use all the types of liposomes known.

The book is divided into six chapters. The introductory chapter gives a very simple guide to what liposomes are, their chemical constituents, physical structure, and outlines the general principles involved in tailoring liposomes to specific applications. In the second chapter, the author describes in detail all the available methods employed to prepare, modify, and purify liposomes. The third chapter describes techniques for liposome characterization including size determination, lamellarity, permeability, and quantification of entrapped materials, as well as quality and purity of starting materials. The fourth chapter details methods for conjugation of molecules to the membrane of preformed liposomes, and thereafter the use of fluorescent techniques in liposome research is illustrated in chapter 5. The last chapter covers methods that have been found useful in studying the behavior and fate of liposomes in biological systems, that is, their

interaction with cells and organs. This book also contains four practical appendices. Methods of manufacture and purification of starting materials and reagents are given in appendix I, followed by a long list of manufacturers and suppliers of chemicals and equipment (appendix II). A bibliography has also been appended to this book including a list of standard texts on liposomes and phospholipid membranes (appendix III), as well as selected key references cited for different liposome applications, which may trigger ideas as to what is possible in totally unrelated areas (appendix IV).

This book may serve as an introductory textbook for the basic principles of liposomology, but most importantly, due to the increasing potential applications of liposomes as drug-delivery systems in the medical field in areas such as cancer chemotherapy, treatment of systemic fungal infections, immunomodulation, diagnosis, and as carriers of vaccines, this volume, which contains a wealth of easily accessible data, is also an essential reference for biochemical research and biotechnologists.

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**Platelet-Activating Factor in Endotoxin and Immune Diseases.** Edited by Dean A. Handley, Robert N. Sanders, William J. Houlihna, and John C. Tomesch. Marcel Dekker, New York. 1990. xv + 692 pp. 16 × 23.5 cm. ISBN 0-8247-80-98-1. \$165.00.

In the decade since the structure of platelet-activating factor was elucidated, a striking amount of research has centered on this powerful mediator of inflammation. This text has organized a review of the current status and trends in PAF research and highlighted several of the more important PAF receptor antagonists. The text of some 32 chapters, some of which list over 300 references, provides many differing points of view into this important area of research. Although some discussion of the medicinal chemistry underlying the search for potent PAF antagonists is presented, much of the book is devoted to biology. And, although the activity of several antagonists is described, the biological effects of platelet-activity factor itself are covered in depth. Most of the chapters are relatively short and arranged to give the reader insight into the development of this agent.

The book is divided into four sections. The first section of four chapters covers the *in vitro* activity of PAF, including an account of the early research and a discussion of the structure-activity relationships of both receptor agonists and antagonists. The second segment of seven chapters describes *in vivo* studies of this factor and its effect on the cardiovascular system, ocular inflammation, and early pregnancy.

The third portion of this treatise discusses the effect of PAF and PAF receptor antagonists on numerous immune-mediated diseases, such as organ transplantation and autoimmune disorders. An extended examination of the effect of PAF on asthma and on the airway follows, then the volume concludes with nine chapters on the role of PAF and its antagonists on endotoxin-mediated diseases.

All scientists concerned with this area of research will find this text a valued addition to their libraries, although its price might inhibit some.

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#### Books of Interest

**A Guide for the Perplexed Organic Experimentalist. Second Edition.** By H. J. E. Loewenthal. John Wiley & Sons, New York. 1990. x + 239 pp. 13.5 × 20.5 cm. ISBN 0-471-91712-5. \$59.95.

**Specialist Periodical Reports. Carbohydrate Chemistry. Volume 22. Monosaccharides, Disaccharides, and Specific Oligosaccharides. A Review of the Literature Published in 1988.** Senior Reporter: R. J. Ferrier. Royal Society of Chemistry, Cambridge, U.K. 1990. xvi + 294 pp. 14.5 × 22.5 cm. ISBN 0-85186-212-8. £82.50.

**Pharmaceutical Dosage Forms: Tablets. Volume 3. Second Edition, Revised and Expanded.** Edited by Herbert A. Lieberman, Leon Lachman, and Joseph B. Schwartz. Marcel Dekker, Inc., New York. 1990. xviii + 561 pp. 18.5 × 26 cm. ISBN 0-8247-8300-X. \$99.75.

**Protein Purification Applications. A Practical Approach.** Edited by E. L. V. Harris and S. Angal. Oxford University Press, New York. 1990. xiv + 179 pp. 16 × 23 cm. ISBN 0-19-963023-2. \$36.00.

**Methods in Inositide Research.** Edited by Robin F. Irvine. Raven Press, New York. 1990. xvii + 219 pp. 16 × 24 cm. ISBN 0-88167-677-2. \$45.00.

**Neuromethods. 17. Neuropsychology.** Edited by Alan A. Boulton, Glen B. Baker, and Merrill Hiscock. The Humana Press, Inc., Clifton, New Jersey. 1990. xx + 381 pp. 16 × 23.5 cm. ISBN 0-89603-133-0. \$79.50.

**Management of Blood Transfusion Services.** Edited by S. R. Hollan, W. Wagstaff, J. Leikola, and F. Lothe. World Health Organization, Geneva, Switzerland. 1990. xii + 229 pp. 16 × 24 cm. ISBN 92-4-154406-6. \$32.80.

**Toxic Interactions.** Edited by Robin S. Goldstein, William R. Hewitt, and Jerry B. Hook. Academic Press, Inc., San Diego, CA. 1990. xiv + 488 pp. 15.5 × 23.5 cm. ISBN 0-12-289515-0. \$99.00.

**Handbook of In Vivo Toxicity Testing.** Edited by Douglas L. Arnold, Harold C. Grice, and Daniel R. Krewski. Academic Press, Inc., San Diego, CA. 1990. xviii + 678 pp. 15.5 × 23.5 cm. ISBN 0-12-063380-9. \$95.00.

**The Genome. Frontiers in Molecular and Cellular Biology.** By Ram S. Verma. VCH Publishers, Inc., New York. 1990. xix + 327 pp. 16 × 24 cm. ISBN 1-56081-043-2. \$75.00.

**Handbook of Nonprescription Drugs. 9th Edition.** American Pharmaceutical Association/The National Professional Society of Pharmacists. Project Director/Managing Editor Edward G. Feldmann. The National Professional Society of Pharmacists, Washington, D.C. 1990. xi + 1068 pp. 22.5 × 28 cm. ISBN 0-917330-60-9. \$98.00. (\$78.00 for APhA members).

**Progress in Biomedical Polymers.** Edited by G. Gebelein and Richard L. Dunn. Plenum Publishing Corp., New York. 1990. xi + 406 pp. 17 × 25.5 cm. ISBN 0-306-43523-3. \$89.00.

**Research Proposals. A Guide to Success.** By Thomas E. Ogden. Raven Press, Inc., New York. 1990. xiv + 397 pp. 17.5 × 25.5 cm. ISBN 0-88167-740-X. \$39.00.

**Binding and Linkage. Functional Chemistry of Biological Macromolecules.** By Jeffries Wyman and Stanley J. Gill. University Science Books, Mill Valley, CA. 1990. xiii + 330 pp. 17 × 24.5 cm. ISBN 0-935702-56-3. \$44.50.

**Organometallic Chemistry. Volume 19. Specialist Periodical Reports.** Senior Reporters: E. W. Abel and F. G. A. Stone. Royal Society of Chemistry, Cambridge. 1990. xvi + 468 pp. 14 × 22.5 cm. ISBN 0-85186-671-9. \$137.50.

**General and Synthetic Methods. Volume 12. A Specialist Periodical Report. A Review of the Literature Published in 1987.** Senior Reporter G. Pattenden. Royal Society of Chemistry, Cambridge, England. 1990. xiv + 554 pp. 14 × 23 cm. ISBN 0-85186-934-3. £135.00.

**Organophosphorus Chemistry. Volume 21. A Specialist Periodical Report. A Review of the Recent Literature**

- Published between July 1988 and June 1989.** Senior Reporters B. J. Walker and J. B. Hobbs. Royal Society of Chemistry, Cambridge, England. 1990. xii + 428 pp. 14.5 × 22.5 cm. ISBN 0-85186-196-2. £120.00.
- Microemulsions and Emulsions in Foods.** ACS Symposium Series 448. Edited by Magda El-Nokaly and Donald Cornell. American Chemical Society, Washington, DC. 1991. x + 268 pp. 16 × 23.5 cm. ISBN 0-8412-1896-X. \$54.95.
- Guidebook to Organic Synthesis.** 2nd Edition. By R. K. Mackie, D. M. Smith, and R. A. Aitken. John Wiley & Sons, Inc., New York. 1990. xi + 387 pp. 15.5 × 23.5 cm. ISBN 0-582-03375-6. \$34.95.
- Management of R & D Organizations. Managing the Unmanageable.** By R. K. Jain and H. C. Triandis. John Wiley & Sons, Inc., New York. 1990. xix + 268 pp. 16.5 × 24 cm. ISBN 0-471-50791-1. \$49.95.
- Organic Synthesis. Volume 68.** Edited by James D. White. John Wiley & Sons, Inc., New York. 1990. xv + 318 pp. 15.5 × 23.5 cm. ISBN 0-471-53789-6. \$34.95.
- Handbook of Oligosaccharides. Volume I. Disaccharides. Volume II. Trisaccharides.** By Andra Liptak, Peter Fugedi, Janos Harangi (Vol. II), and Zoltan Szurmai. CRC Press, Boca Raton, FL. 1990. 474 pp (Vol. I), 267 pp (Vol. II). 18 × 26 cm. ISBN 0-8493-2901-9 (Vol. I), ISBN 0-8493-2902-7 (Vol. II). \$149.95 (2 volume set).
- The Use of Essential Drugs. Model list of essential drugs. Technical Report Series 796.** By World Health Organization, Geneva, Switzerland. 1990. 57 pp. 14 × 20 cm. ISBN 92-4-120796-5. Sw fr. 8.
- Progress in Histochemistry and Cytochemistry. Volume 21. No. 2. Ultrastructural Immunocytochemistry of the Hypothalamic Corticotropin Releasing Hormone Synthesizing System.** By Zsolt Liposits. Gustav Fischer Verlag, New York. 1990. vi + 98 pp. 17 × 24 cm. ISBN 0-89574-317-5.