

## Book Reviews

**Organic Reactivity: Physical and Biological Aspects.** Edited by Bernard T. Golding, Roger T. Griffin, and Howard Maskill. The Royal Society of Chemistry, Cambridge, U.K. 1995. xv + 453 pp. 16 × 24 cm. ISBN 0-85404-710-7. £69.50.

This is a collection of lectures given at a symposium of the same title held at the University of Newcastle upon Tyne in 1993. The intent of the symposium was to present a forum for discussion of the latest problems in bioorganic and physical organic chemistry. The compilation of these diverse topics in one volume should promote interdisciplinary communication and aid further research.

The text is divided into two main sections, approximately of equal length. The first relates bioorganic problems of current interest. The 16 chapters in this section cover a wide range of topics from hydrogen tunneling (Judith P. Klinman) through enzymatic aromatic hydroxylations (Derek R. Boyd) and protein-ligand NMR studies (James Feeney). The second section contains contributions from physical organic chemists ranging from computational chemistry (Leo Radom) through reactive intermediate stability (Tina L. Amyes) to ion pair and ion-molecule pair interactions (Alf Thibblin).

Despite its inception as a series of lectures, the text as a whole is well-organized and coherent. Chapter figures, taken primarily from the authors' original diagram, were clear and detailed. As befits a discussion of *current* research interests, the references for each chapter were thorough and up to date. At least a graduate level of understanding in both bioorganic and physical organic chemistry is required; however, the chapters are not so specialized as to preclude understanding by those not directly involved.

In summary, the editors have produced an organized and eminently readable text covering a wide range of subjects. Although not suitable as a sole text for a graduate course in organic reactivity, it should be very useful as an adjunct text. It is also recommended for the professional chemist who wishes to review some current developments in organic reactivity from a range of viewpoints.

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**Biological Approaches To Rational Drug Design.** Edited by B. Weiner and W. V. Williams. CRC Press, Boca Raton, FL. 1995. 185 pp. 18 × 26 cm. ISBN 0-8493-9422-8. \$99.95.

This book is a collection of articles by workers active in the field of drug design, whose point of departure is an understanding of disease pathogenesis. These articles are built up from the use of molecular biological

techniques that have been largely successful. The eight chapters reveal the background, physiology of the disease, lead generation, and subsequent preparation of candidate molecules and structure-activity revelations.

It is evident that the various authors have had close guidance from the editors, resulting in uniformly instructive chapters. The first chapter is on the identification of lead peptides from epitope libraries. This is an excellent step by step development of this process. The illustrations are well done, and the timely reference list is of considerable value. The second chapter reviews the approaches to drug design from the interleukin receptor pathway. This is a well developed excursion through this area, covering the structural impact of the proteins and the molecular interpretation. The third chapter deals with hematopoietic colony stimulating factors in drug design. It is a relatively short review but documented with a large number of references. Chapter 4 on monoclonal antibodies focuses on technical development and therapeutic indication. It is, unfortunately, a short article in an important area.

The fifth chapter concerns T cell receptor-based therapy. This presents an excellent build up of the subject followed by disease applications. Again, as in most of the book, the illustrations are outstanding. Chapter 6 concerns oligosaccharide pharmaceuticals. The utility of this approach in drug targeting is discussed. Chapter 7 concerns gene therapy beginning with a useful description to retroviruses, targets, and vaccines. The final chapter covers antisense deoxy-nucleotides and ribozymes.

The book is well edited, keeping the chapters to a common pattern of development. Each chapter is well chosen, covering very timely topics in the molecular biology realm. Everyone working in these areas or having an interest in drug design from this perspective should acquire this book.

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**Chemical and Structural Approaches to Rational Drug Design.** Edited by D. B. Weiner and W. V. Williams. CRC Press, Boca Raton, FL. 1995. 274 pp. 18 × 26 cm. ISBN 0-8493-7818-4. \$115.00.

This is a collection of nine articles describing current work on drug design based on chemical approaches. Each chapter develops the biological background of the target followed by the rationale employed in the design. Some structure-activity information is explored but this is usually only qualitative. There is no emphasis on synthetic details, but references are often generous. The illustrations are uniformly very good.

The first chapter covers work on ribonucleotide reductase inhibitors. This is a fine review of the subject

with numerous tables revealing test results. The second chapter presents work on reverse transcriptase inhibitors. The current status of models is presented, and recent clinical results are shown. This is a very well documented chapter with numerous references. Chapter 3 presents work on angiotensin II antagonists. Several models are described with good qualitative structure-activity results presented.

Chapter 4 is a review of endothelin receptor antagonist development. The background is presented in a useful way with excellent illustrations. Mechanisms and clinical relevance are discussed. This is a very good discussion of this topic with over 300 references. Chapter 5 covers molecular targeting in rational drug design. This is a useful summary of current work in this area.

Chapter 7 is a presentation of some current methods of biocomputation in protein-based drug design. It deals briefly with protein sequence alignment, tertiary structure, and simulations. Over 400 references accompany the article. Chapter 8 deals with zinc-protein ligand complexes. This covers recent work on recognition and affinity of this metal for proteins. The final chapter discusses the design of immunomodulatory peptides. This short chapter touches on the rationale and some recent work in this area.

The selection of topics is timely, and the editors have exercised good control to ensure that there is uniform quality in the articles. The book has both reference and

teaching value and should be in the personal libraries of workers in any of these areas.

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### Books of Interest

**Synthesis and Chemistry of Agrochemicals IV. ACS Symposium Series 584.** Edited by Don R. Baker, Joseph G. Fenyes, and Gregory S. Basarab. American Chemical Society, Washington, D.C. 1995. xiv + 490 pp. 16 × 23.5 cm. ISBN 0-8412-3091-9. \$129.95.

**Free Radicals and Oxidation Phenomena in Biological Systems.** By Marcel Roberfroid and Pedro Buc Calderon. Marcel Dekker, Inc., New York. 1995. ix + 272 pp. 16 × 23.5 cm. ISBN 0-8247-9587-3. \$115.00.

**Principles of Cell Adhesion.** Edited by Peter D. Richardson and Manfred Steiner. CRC Press, Boca Raton, FL. 1995. 391 pp. 18.5 × 26 cm. ISBN 0-8493-4559-6. \$149.95.

**The Language of Biotechnology. A Dictionary of Terms. Second Edition.** By John M. Walker and Michael Cox. American Chemical Society, Washington, D.C. 1995. viii + 296 pp. 15 × 23 cm. ISBN 0-8412-2982-1. \$29.95 (pbk).

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