

ground in these areas. It is no longer just sufficient to synthesize and test; experiments are played out *in silico* with prediction, classification, and visualization being the necessary tools of medicinal chemistry. This book is in this new mainstream.

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**The Ionotropic Glutamate Receptors.** Edited by Daniel T. Monaghan and Robert J. Wenthold. Humana Press, Totowa, NJ. 1997. x + 378 pp. 16 × 23.5 cm. ISBN 0-89603-4756-9. \$135.00.

This book is the 13th entry into the "Receptor" series edited by David Bylund and others. As with earlier books in this lineage, *Ionotropic* attempts to provide an up to date and reasonably thorough "overview of (the) most recent wave of information (and a) fresh understanding of glutamate receptor properties at the molecular level." As noted by the editors, (they) "face(d) the challenge of covering a rapidly growing and changing field that is perhaps already too broad for complete coverage in a single volume." The reviewer tends to agree. That being said, within the practical limitations of a book, *Ionotropic* offers a reasonable coverage of the biochemical, physiological, and pharmacological properties of recombinant ionotropic glutamate receptors and attempts to compare these to the properties of native glutamate receptors expressed in the central nervous system.

*Ionotropic* contains 14 chapters that are broadly divided into four main topic areas. The first chapter, an historical review of the area by David Lodge, is thoroughly delightful reading which should be requisite material for graduate students entering the area.

Chapters 2–6 focus on molecular properties of glutamate receptor subunits with the last two of these detailing receptor modulation by phosphorylation. Chapters 7–9 present a description of the anatomical localization of specific glutamate receptor subunits as determined by *in situ* hybridization and immunohistochemistry. The last five chapters describe the pharmacological and physiological properties of NMDA and non-NMDA receptors. Notably, there is an emphasis to present molecular cloning data in such a way as to help explain the vast earlier (precloning) literature on glutamate receptors.

By the way of specifics, the 14 chapters are authored by 27 contributors, each of whom is easily recognized as a leading expert in the area. Nine chapters (Lodge, Hollmann, Sommer, Soderling, Watanabe, Petralia, Huettner, Verdoorn, and Morrisett) have only one author. Chapters range from 10 to 40 pages. Each contribution is thoroughly referenced, although most citations are pre-1996, suggesting either little of relevance occurred that year or that the chapters were written about a year ago. References are provided in full format, facilitating further searching of the subject area. The five and a quarter page index is somewhat limited for a book of this size.

Overall, *Ionotropic* achieves its principal aims of presenting an overview of this rapidly growing area of research. While the information contained within is already somewhat dated, the book would be useful to students entering the area, or more senior researchers desiring a quick introduction to ionotropic excitatory amino acid neurotransmission. With a price tag of \$135.00, *Ionotropic* is most suitable for the department or institutional library.

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