Book Review

Quantitative Characterization of Ligand Binding, by Donald J. Winzor and William H. Sawyer

Wiley, New York; 1995; $79.95/cloth, ISBN: 0-471-05957-9; $39.95/paperback, ISBN: 0-471-05958-7

This book was written with the aim of introducing the subject of quantitative ligand binding to biologists and covers both theory and practice. The origins and derivations of mathematical expressions are indicated with abundant reference to original publications, and the emphasis is on the application of the expressions. Experimental procedures are described, along with helpful suggestions about problems and pitfalls to be avoided.

The authors begin with analysis of simple binding responses and descriptions of Scatchard and other plots for determining equilibrium constants and numbers of binding sites. They then move into phase separation techniques and spectral studies. One chapter is devoted to determining equilibrium constants from competitive binding assays. Here, they deal with ELISA, affinity chromatography, and biosensor technology. Other chapters discuss complexities and complications of binding analyses.

The focus is on equilibrium measurements. The authors touch on kinetics only as it relates, in some instances, to equilibrium measurement (e.g., the relation of Michaelis-Menton enzyme kinetics to ligand binding and some considerations with regard to nonspecific binding).

The subject is complex, and the number of subtopics and, thus, equations dealt with has led to a very large number of mathematical symbols that authors have conveniently listed in a glossary. I believe the average student of biological sciences will first wish to consult other books of a more introductory nature to gain an initial fundamental understanding of ligand binding and will find this text very useful as a reference. There is a wealth of carefully presented information assembled here, and I recommend the book for the valuable insights it can provide to those planning and conducting experiments in quantitative ligand binding.

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