REVIEWS

Physical Chemical Properties of Drugs. By SAMUEL H. YALKOWSKY, ANTHONY A. SINKULA, and SHRI C. VALVANI. Dekker, 270 Madison Ave., New York, NY 10016. 1980. 361 pp. 14 × 23 cm. Price $45.00 (20% higher outside U.S. and Canada).

An understanding of the chemical properties of a drug is necessary for understanding its activity since covalent bonding at the reaction site sometimes is (and metabolism always is) an important consideration. However, over the past two decades more sophisticated analytical tools, *e.g.*, NMR and X-ray crystallography, have focused our attention on the fact that it is the wide variety of weaker physicochemical forces that nature uses to define a drug for a very specific purpose. Therefore, there recently has been a concerted effort to measure and report these physical constants.

Actual application of appropriate constants to drug design has been limited by two factors: measurement of these constants has not kept pace with the need, and application methodology has lagged behind in certain areas. This volume does a great deal to remedy both shortcomings. Chapters 1, 5, 8, 9, and 10 describe calculation procedures for pKa, partition coefficient (octanol/water), solubility parameter, molecular connectivity, and molecular surface areas, respectively. Chapters 2, 3, 6, and 7 focus on the more effective use of pKa, hydrophobicity, solubility, and thermodynamic considerations in drug improvement. Chapter 4 points out important limitations in the Hansch approach to structure–activity relationships.

This book does not in any important way duplicate others presently available in this field. It can be highly recommended to anyone with a strong commitment in drug design, as well as to students in advanced courses in that discipline. This book should be very valuable to anyone involved in modeling environmental transport and fate.

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Pharmaceutical Dosage Forms: Tablets Vol. 2. Edited by HERBERT A. LIEBERMAN and LEON LACHMAN. Dekker, 270 Madison Avenue, New York, NY 10016, 1981. 520 pp. 18 × 25.5 cm Price $59.75. (A special student price of $24.50 for five or more copies through a college or university bookstore in the United States or Canada.)

The second volume of this set lives up to the promise of the first. Whereas the first volume emphasizes the distinction between the types of tablets with details on the manufacturing of each, this volume discusses each unit process completely. As before, each chapter develops without a dependency on the nuances of other sections.

The first four chapters cover mixing, drying, size reduction, and compression. Chapter five is really two chapters, one on the characterization of granulations, and the other on the evaluation of finished tablets. The final chapter is a review of tablet press tooling. The types of punches, terminology, control, and problem solving are all discussed in excellent detail.

Chapter six, "Bioavailability in Tablet Technology," is over one-third of this volume. This does seem excessive. Most relevant background biopharmaceutic and pharmacokinetic concepts are reviewed in detail from the everted gut technique, pH partition, dissolution, and compartmental modeling, to multiple dosing kinetics. There are excellent sections of dissolution evaluation and bioavailability assessment, with liberal referencing to the Federal Register. Examples are given of virtually everything discussed, and yet there is no discussion of the FDA's statistical criteria of bioavailability of bioequivalence or of their criteria for the setting of a dissolution specification for generic bioavailability. These were needed more than some portions of the existing chapter when considering where this chapter is presented.

Nevertheless, this set, when completed, will probably be the state-of-the-art for many years to come.

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