Book Reviews

Practical HPLC Method Development. By Lloyd R. Snyder (L. C. Resources, Inc.), Joseph J. Kirkland (Rockland Technologies, Inc.), and Joseph L. Glajch (DuPont Merck Pharmaceutical Co.). Wiley: New York. 1997. xxvi + 765 pp. $84.95. ISBN 0-471-00703-X.

This is an up-to-date book that provides extensive coverage of the essential steps of method development in high performance liquid chromatography (HPLC). As such it will replace on many shelves the now classic book in HPLC, *Modern Liquid Chromatography*, 2nd ed., published in 1979 by Wiley-Interscience and written by two of the same authors, Lloyd R. Snyder and Joseph J. Kirkland. This new book has been carefully written and reviewed by not only the authors but by various chromatographers working in the various fields of HPLC. The book provides extensive indexing and cross-referencing making it a great resource for the experienced and mid-experienced, practicing chromatographer. However, its detail and length are too overwhelming for the beginning chromatographer who might better start by using one of the simple monographs on HPLC. The literature references are up to date through 1995 with a sprinkling of the important 1996 citations.

The authors have effectively blended into their well illustrated book all of the necessary more classical as well as the important newer areas of HPLC. Chapter 1 discusses how to get started in HPLC. Chapter 2 presents many of the basics of HPLC separations and includes many of the important equations, illustrations and tables that every chromatographer has been accustomed to see from Snyder's and Kirkland's earlier books and/or short courses. Chapter 3, authored with Ira Krull and Mike Szulc, provides a complete introduction into important HPLC detectors including the various forms of LC/MS ionization methods. Chapter 4, coauthored with Ron Majors and Greg Slack, discusses the importance of sample preparation. Chapter 5 is about the characteristics of the HPLC column and column packings. Exquisitely organized, Chapter 6 provides complete descriptions of reversed-phase and normal-phase HPLC separations of nonionic samples, while separation involving ionic samples are presented in Chapter 7. Chapter 8 involves gradient elution; Chapter 9 discusses the systematic approach to method development for reversed-phase systems, while Chapter 10 gives a narrative of the different computer-assisted method development software programs that are available to aid, guide and remind those doing HPLC. For those needing information on biochemical separations, Chapter 11, coauthored with Barry Boyd and Andy Alpert, will be very worthwhile, while Chapter 12, coauthored with John Kern and Karin Kirkland, provides, in this reviewers opinion, the best and most complete presentation of chiral separations performed by HPLC. Preparative HPLC separations are presented in Chapter 13, while Chapter 14 discusses quantitation, including those for trace analyses. Many of the subjects of the book are brought together in Chapter 15 that involves completing the method and includes suggestions toward HPLC method validation.

It is hoped that the above list of chapter topics will convince the reader that this is a very comprehensive book, effectively covering the many different aspects of HPLC. The in-depth, complete and modern coverage of HPLC that this book provides will make this a bestselling reference book of HPLC for not only now but for years to come.

James D. Stuart, *The University of Connecticut*

JA975555H

S0002-7863(97)05555-8

Analytical Method Development and Validation. By Michael E. Swartz (Waters Corp.) and Ira S. Krull (Northeastern University). Marcel Dekker: New York. 1997. 92 pp. $35.00. ISBN: 0-8247-0115-1.

The authors' stated objectives were to present a straightforward process for development, optimization, and validation of new analytical methods. Their concern is that too many analytical methods introduced in the literature are introduced without complete and adequate validation. As a result, these methods are all-to-often found not to be applicable with typical real-world samples.

The guidelines presented have been crafted to be consistent with current USP regulations, as well as follow the International Conference on Harmonization (ICH) guidelines. In this small (5.5 × 8 in.) book Chapter 1 briefly introduces the validation process and is followed by two longer chapters (half of the book) that provide an extensive discussion of Method Development, Optimization, and Validation Approaches and the Method Validation process. The final 12 pages briefly discuss System Suitability, present a Method Validation Protocol, describe the procedures for Method Transfer and Revalidation, and briefly (one paragraph) summarize the subject.

The authors have nicely covered the basics of the development/validation process in their little book. Through the use of two tables and nine figures, they have also provided good visual aids to assist one in following the concepts presented. One downside to the presentation is the extensive use of symbols, acronyms, and technical terms (e.g., performance qualification) which prevent the text from flowing well. Unless one is already familiar with the terms being used to describe various facets of the validation process, they may well have to page back to the list of abbreviations or to previously defined terms. This is especially true, when one tries to read the book by picking it up for a few minutes a day. Fortunately the list of abbreviations is conveniently placed before Chapter 1.

Despite its readability shortcomings, the book does provide its readers with the essential elements and steps toward properly validating the analytical methods they are developing. With the development and optimization of an HPLC method presented as an example to follow the technical descriptions, the reader should be able to extrapolate the validation process to the method(s) they are attempting to develop and publish.

Barry H. Gump, *California State University, Fresno*

JA975573Z

S0002-7863(97)05573-X

Advances in Antiviral Drug Design. Vol. 2. Edited by E. De Clercq (Katholieke Universiteit Leuven). JAI Press: Greenwich, CT. 1996. x + 233 pp. $109.50. ISBN 1-55938-693-2.

Since AZT was discovered as an anti-HIV agent, antiviral chemotherapy has been a rapidly growing and developing area for the past 10 years, and a number of anti-HIV agents have been available for patients during this period. Therefore, we have witnessed an extraordinary period of efforts made by academia, industry, and governmental agencies to discover and develop anti-HIV agents, in particular. Although modest efforts for anti-HIV drug discovery are continuing, the emphasis for the past few years has now shifted toward non-AIDS-related antiviral drug discovery. Intensive effort is now directed toward the drug discovery for hepatitis B and C viruses. Previously, the editor of this book has published several volumes of useful books related to antiviral chemotherapy, and the current volume is part of the continuation of this series and nicely complements previous volumes.

The current volume consists of five chapters: (1) Antisense Oligonucleotides as Antiviral Agents, (2) Design and Synthesis of S-Adenosylhomocysteine Hydrolase Inhibitors as Broad-Spectrum Antiviral Agents, (3) Carbocyclic Nucleosides, (4) Comments on Nucleotide Delivery forms, (5) Discovery and Design of HIV Protease Inhibitors as Drugs for Treatment of AIDS. Although most chapters except Chapter 4 have previously been reviewed several times in other places, in this volume each chapter has been written as a comprehensive, up-to-date, and well-referenced article written by experts in each field. Therefore, this volume will be useful to investigators in the field of antiviral chemotherapy who want to rapidly review the area without going through an extensive literature search. Particularly, this volume will be very useful to graduate students who are ready to get into the field or are currently involved in the field.

C. K. Chu, *University of Georgia*

JA975589P

S0002-7863(97)05589-3