

Book Reviews*

Traditional Medicines for Modern Times. Antidiabetic Plants. Edited by A. Soumyanath (Oregon Health & Science University). CRC/Taylor & Francis, Boca Raton. 2006. xii + 527 pp. 7 × 10 in. \$139.95. ISBN 0-415-33464-0.

Those whose primary interest is assessing and doing research on plants for diabetes will appreciate this text, but those mainly concerned with treating diabetic patients on the basis of established knowledge of efficacy and safety will find this book of secondary usefulness. In either case, its 31 contributors provide a detailed source of current knowledge on regional and cross-cultural traditional applications and scientific evidence regarding potentially useful plants for managing hyperglycemia.

A useful overview of diabetes mellitus types 1 and 2 is given in Chapter 1. This discussion is directed at pathophysiology and therapeutic interventions while alluding to possible causes of the current worldwide epidemic, shown by WHO data to have risen from 30 million cases in 1985 to 171 million in 2000. Causation and prevention are not emphasized in the context of discussing plant agents for the modulation of isolated physiological mechanisms. While the focus of Chapters 3 and 4 on *in vitro*, preclinical, and clinical models of evaluating antidiabetic activity is intended to differentiate appropriate research protocols, these features likewise provide useful knowledge for practitioners to understand the context in which to interpret the research findings. Much critical information here applies to phytotherapy research for all types of pathological conditions.

Botanicals can and do provide affordable means of available treatments for diabetes worldwide. Chapter 2 provides a thorough 42-page table of plants traditionally used as remedies for diabetes, providing their distribution, part used, and comments with citations. It relies heavily on the 1995 reference work by Marles and Farnsworth. The updated content is arranged alphabetically on the basis of the hierarchy of division, class, order, family, genus, and species, making the information more difficult to access for nonbotanists. However, the purpose of the arrangement is to facilitate recognition of phylogenetic relationships and potential commonality of shared components or phytochemical similarities. The advantage this approach offers to researchers is lost for those not cognizant of botanical systematics.

This book moves beyond the criteria of considering the historical record to direct botanical and phytochemical research. The more extensive written record from ancient civilizations of China, India, and the Middle East or familiar European and English-language literature can bias an overview focusing on those plant for which traditional applications are documented. The text carefully examines the major representative cultural expressions of traditional botanical use separately to assess potential value underlying even poorly reported botanical traditions. In addition to Western herbalism and different East Indian, Chinese/Japanese, and Middle East/North African traditions, individual chapters on Native American, Mexican/Central American, Caribbean, African, and Australian/New Zealand indigenous plants document the recent research and empirical knowledge on antidiabetic botanicals from these areas. Of concern are the ethical issues of bioprospecting and intellectual property rights.

Although a few botanicals that have shown clinical efficacy, such as *Coccinia indica* and *Amorphophallus konjac*, are barely mentioned, most herbs are thoroughly covered. Besides considering complex botanical extracts with multiple active components, three chapters selectively examine specific phytochemical categories for

their physiopharmacological effects. These separately cover polysaccharides, saponins, and polyphenols as providing promising options for either therapeutic use or drug development. So, while this book is highly attractive for those involved in diabetic research, it can also help practitioners apply phytopharmacological knowledge to address the contributing factors and treat the different expressions of diabetes.

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Practical High-Performance Liquid Chromatography, 4th ed. By Veronika R. Meyer (EMPA, St. Gallen, Switzerland). John Wiley & Sons, Chichester. 2004. xv + 357 pp. 6 × 9 in. \$75.00. ISBN 0-470-09378-1.

In the fourth edition of *Practical High-Performance Liquid Chromatography* the author has successfully updated this classic primer on HPLC to reflect the developments made in recent years. These include the more sophisticated hyphenation techniques and modern column technology, such as capillary LC and monolithic stationary phases. The information is provided in a way that the reader can easily pick up just the basics, if that is all that is desired. All of the mathematical formulas behind the concepts are provided, though, so one can reach a more fundamental grasp of the theories by solving the problems that are included throughout the text. In this way, the author has produced a resource that can be an asset to both novice and experienced chromatographers alike.

The first half of the book covers some of the fundamentals of HPLC. The text progresses in a logical fashion, beginning in early chapters with a discussion of the principles that establish the foundation of all chromatographic separations, such as the concepts of phase distribution, band broadening, theoretical plates, and resolution. These tenets are defined mathematically and graphically. Furthermore, they are explained so that the reader understands their relationships with one another and their impact on the chromatogram. This is followed by a review of the different components common to all HPLC instruments such as pumps, detectors, and columns. At this point, the author devotes space to different packing materials available and gives a very good description of the benefits provided by the use of smaller diameter columns. There is also an entire chapter covering the quantitation of column performance that this reviewer considered too technical for the typical HPLC user.

In the second half of the book the author devotes several chapters to the discussion of the different types of chromatography. This includes normal phase, curiously referred to as adsorption chromatography, reverse phase, size exclusion, and ion exchange, as well as others. These chapters are best read on an as-needed basis, since it is unlikely that anyone would be using all of these techniques regularly. In the final few chapters, the author provides some criteria for determining what sort of column is best suited for different types of samples and optimization of parameters for best results. There are also discussions about the general topics of analytical, preparative, and chiral chromatography and some of the specific issues that have to be addressed with each. Finally, there

are four appendices covering applied theory, instrument tests, troubleshooting, and column packing.

Overall, the author has managed to produce an excellent resource covering nearly all aspects of modern HPLC. There is a fair amount of mathematics included, which may not be of interest to some readers. But for those who wish to obtain a complete understanding of the technique, the formulas provide the necessary foundation. This reviewer has purchased a copy for the lab, and everyone who has picked it up has found valuable information to assist

him/her in research. Is there any better endorsement one can make?

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