

Book Reviews

Methods in Biotechnology 4: Natural Products Isolation. Edited by Richard J. P. Cannell (Glaxo Wellcome, Hertfordshire, U.K.). Humana Press, Totowa, NJ. 1998. x + 590 pp. 15 × 22.5 cm. \$89.50. ISBN 0-896-03362-7.

This book consists of a series of fifteen chapters covering various aspects of the natural products isolation process. The chapters range in length from 14 to 52 pages, and all include relevant references. There is a distinct industrial flavor to the volume, in that most of the chapters are authored or coauthored by industrial researchers. This leads to some emphasis on microbial metabolites in some cases, but efforts are made to include examples of all types. The book contains a healthy dose of practical information, tips, and specific suggestions covering fine points of the various topics. In many instances, step-by-step instructions are given in how to utilize a technique, and all of the chapters employ detailed, specific examples to illustrate applications. A couple of the chapters are a bit shorter or less extensively referenced than one might like, but all things considered, the coverage is quite comprehensive. Brief, theoretical treatments of principles of chromatography, solubility, extraction, and other relevant areas are included where appropriate, and overlap among chapters is limited.

The volume begins and ends with two chapters authored by the Editor. The introductory chapter summarizes important aspects of how to approach the problem of isolation of small quantities of unidentified natural products from complex mixtures. The closing chapter offers coverage of a variety of miscellaneous issues not addressed in the other chapters, such as seeking minor analogs, conducting certain types of biosynthetic experiments, biotransformation techniques, etc. The other chapters approach the isolation process from several different angles. Two of them address issues specifically associated with isolation of plant metabolites (G. Silva, I. Lee, and D. Kinghorn) and marine natural products (A. Wright). Others focus on specific techniques, including extraction and product capture (P. Gailliot), column chromatography (G. Salituro and C.

Dufresne), HPLC (P. Stead), planar chromatography (S. Gibbons and A. Gray), crystallization (N. Shankland, A. Florence, and R. Cannell), countercurrent chromatography (J. McAlpine), ion-exchange (C. Dufresne), and supercritical fluid methods (E. Venkat and S. Kothandaraman). The remaining chapters complement the above by covering important topics like dereplication (F. vanMiddlesworth and R. Cannell), scale-up (M. Verrall and S. Warr), and how to approach the purification of water-solubles (Y. Shimizu).

The primary target audience for this book, as noted by the Editor, includes scientists with little experience in natural products isolation, such as students undertaking natural products-based research or scientists from other disciplines who need to isolate a small molecule from a biological mixture. While it is not intended as a stand-alone text for a special topics course (e.g., no problems to work), it is certainly a very good general reference that concentrates a considerable amount of useful practical information. It is likely to be helpful for those who want to expand their tool chest of separation techniques or those who simply would like to have a general reference to help students or technicians become better acquainted with some of the nuances of methods they will need to use.

All of the chapters are neat, well-proofed, and nicely illustrated, with a uniform format differing minimally from one chapter to the next. The cost of this book is in line with other volumes of its type, and it is well worth considering as a reference for graduate students or other researchers who might need to familiarize themselves with the intricacies of the subject.

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