

## Book Reviews

**Downstream Processing of Natural Products: A Practical Handbook.** M. S. Verrall, John Wiley & Sons, Chichester, 1996, xviii + 354 pp. Price £65.00, ISBN 0-471-96326-7.

Natural products are broadly defined as high value chemical entities derived from plants or microbial sources. They have been known and exploited for many years. Many natural product isolations are developed because of the potential interest of the compound to the pharmaceutical industry. Progression of a new drug substance to the market involves a large number of stages and the compilation of an extensive dossier on all aspects of the compound.

'*Downstream Processing of Natural Products*' is a highly practical manual which guides the researcher through all stages of natural product isolation. The strategy for isolation assumes that no prior information is available on the compound. The science of downstream processing consists of a wide variety of techniques and the three main stages of natural

product isolation are addressed, namely product release, capture and purification. Much of the text presented describes the processing of microbial products, however, similar principles can be applied to plant products.

The 21 chapters of this book cover techniques such as broth conditioning and clarification, cell disruption, aqueous two-phase partition, solvent extraction and product modification to assist isolation and membrane processing. In addition, a range of chromatographic techniques, supercritical fluid extraction, lyophilization, instrumentation, process and quality controls, and scale-up considerations are discussed. There is also a special mention of the requirements of the regulatory authorities with respect to Good Manufacturing Practice.

The information in this book serves as a valuable practical guide to academic and industrial researchers involved in natural product isolation

**Marion Paterson  
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