Book Reviews

Drug Discovery and Development. Volume 1: Drug Discovery. Edited by Mukund S. Chorghade. John Wiley & Sons, Inc. Hoboken, NJ. 2006. xix + 456 pp. 18 × 26 cm. ISBN 0-471-39848-9. $99.95.

This first volume of a two-volume set from the publisher represents another addition to the more than a half-dozen books on drug discovery that have appeared in the past few years. As described in its preface, "the book is not designed to be a treatise or an encyclopedia." Rather, "it is envisioned to be an advanced-level monograph with appeal to active researchers and investigators in ... drug discovery and development."

The volume encompasses 16 chapters written by 26 authors from academic and industrial laboratories in the U.S., EU, and India. Two broad surveys, one on contemporary drug discovery (Mitscher and Dutta) and one on future trends (P. W. Erhardt) introduce the later chapters. Ian Hughes follows with an excellent discussion of combinatorial chemistry supported by more than 200 references. The application of this process is illustrated by four case histories showing the utilization of diverse libraries, focused libraries, solid-phase chemistry, and solution-phase chemistry. Peet and Kim contribute a further chapter on the use of solution-phase library synthesis, and they emphasize the importance of thought-driven "small libraries numbering in the hundreds rather the thousands", which contain leadlike or druglike molecules. A review of alternatives to high-throughput screening (HTS) by C. G. Wermuth considers the "SOSA (selective optimization of side activities) approach" and includes a number of interesting examples. For instance, BMS-207940, a picomolar inhibitor of the endothelin A receptor subtype, was developed on the basis of the observed micromolar blocking of this receptor by the antibacterial sulfisoxazole. In his essay on drug metabolism databases, P. W. Erhardt points to the expressed need for statistically derived metabolic probabilities rather than possibilities in these compilations. Jones and Warren broadly survey proteomics. Four chapters provide case histories of the discovery of new therapeutic agents: vasopressin antagonists, remifentanil, nevirapine, and the often-repeated tale of cimetidine. From my own experience at the Drew University Residential School of Medicinal Chemistry, I know that such case histories presented by the inventors are valuable and are very popular with the students. But they tend to reflect a certain proprietary prejudice that sometimes leads to the omission of important lessons. One would like to know, for example, if the exclusive focus on imidazole derivatives in the development of cimetidine, stated to be a "classic textbook example" of structure−activity analysis, led the inventors away from the equally appropriate thiazole (famotidine and nizatidine) and furan (ranitidine) ring systems used by fast-follower competitors.

Of less appeal to the medicinal chemist may be the highly specialized concluding chapters on nuclear imaging, sequestrants, and botanicals.

This reasonably priced book is well-written and produced. It has a useful 32-page index, and it may be considered for acquisition by individuals and libraries.

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