

Book review

The Organic Chemistry of Drug Synthesis (Volume 5) by Daniel Lednicer, Wiley, 1995. £60 (xii + 219 pages) ISBN 0 471 58959 4

This is the fifth volume in the series and summarizes the synthesis of drugs given a United States Adopted Name (USAN), as published by the United States Pharmacopeia in *USAN and the USP Dictionary of Adopted Names* between 1988 and 1993.

The book is organized into 11 chapters on the basis of traditional chemical class categorization. There is also a cross index of drug classes, a cumulative index based on drug name for volumes 1–5 and a subject index for the current volume. The syntheses described come from both journal and patent literature, and the author rightly stresses that the syntheses described are not necessarily the best for the particular compound, but are often designed for the optimum synthesis of analogues. The book is aimed primarily at synthetic organic chemists with an interest in drug discovery.

I was somewhat irritated by the opening quotation in the book – *Making discoveries by accident and sagacity, of things they were not in quest of* – which the author states represented the 'art' of drug discovery 20 years ago, and is still applicable today. This simple statement dismisses the major advances that have been made in the understanding of disease processes and rational drug design. Indeed most of the examples contained within this book have been specifically designed for specific intervention in specific diseases. This aside, the book is well written, easy to follow and provides a very useful overview of the kind of chemistry that has been published by the pharmaceutical industry in recent years. The presentation suffers from the variability in size, font and emphasis of the reaction schemes. Inclusion of reagents on the schemes would have enhanced the impact of the chemistry because not all are mentioned in the text.

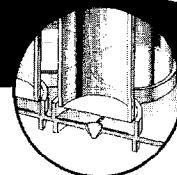
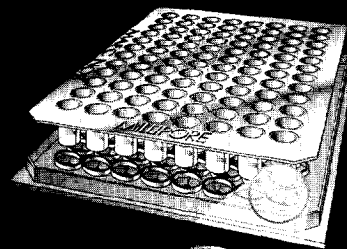
For the experienced medicinal chemist having grown familiar with classification by mechanism of action or disease area, the organization by chemical class is frustrating; similar compounds with similar pharmacology appear in very different parts of the book. This is where the cross index becomes essential, even though the reader must constantly refer back to the subject index. Another consequence of the chemical categorization is that there is duplication of often superficial introductory sections.

The book is relatively error free, and each compound is well referenced, so that the reader is immediately directed to the literature for further information. Some snippets of medicinal chemistry principles are introduced, but such a book cannot be expected to give a good overview of how drugs are designed. However, some opportunities are missed, such as explaining why particular syntheses were chosen for optimum efficiency of analogue synthesis and pointing out simple concepts such as bioisosterism.

The pharmaceutical industry has traditionally recruited good synthetic organic chemists and then trained them in the principles of drug design. This text is a useful source of recent case histories and hence could form an invaluable part of this re-training. In spite of the above criticisms, this book would make an invaluable addition to any chemistry library and I would recommend it to both chemists recently joining the industry and to teachers and students of Medicinal Chemistry – but I would remove the quotation.

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