

## Book Review

### Dictionary of Steroids. Two Volumes Chemical Data, Structures and Bibliographies, Index

Edited by R. A. Hill, D. N. Kirk, H. L. J. Makin and G. M. Murphy

Published 1991 Chapman and Hall, London

1564 pages in two volumes

ISBN 0 412 27060 9 £750.00

Steroids comprise a large number of clinically used drugs for several different indications including the treatment of cancer, inflammation, contraception, diuresis and heart disease. These two volumes bring together bibliographic, structural and chemical data on more than 10 000 different steroids. The naturally-occurring steroids which are listed include sterols, bile acids, sapogenins, cardanolides, bufanolides and steroidal alkaloids. Synthetic and semisynthetic steroids are also listed in the dictionary. At the beginning of volume 1 there are two chapters which deal with the main types of steroid and also with their nomenclature. The ring structures, configurations, conformations and main steroid classes are concisely described within 15 pages. The 1989 recommendations of the IUPAC-IUB joint commission on biochemical nomenclature of steroids are reviewed within some 29 pages. The remainder of volume 1 comprises 956 pages of steroids which are arranged in alphabetical order from 1 (10→19) abeo-7-acetoxyisooabacun-3,10-olide to zanthosterol. There are accurately drawn structure diagrams for many of the entries and the stereochemistry is clearly indicated. Each entry is accompanied by a bibliographic section which in some instances covers just the one reference but for the more important steroids the bibliography is extensive.

There are five separate indexes which are bound together in volume 2 as 499 pages of text. The Name Index lists every name given in the dictionary, some names of course are embedded within the text of an entry, e.g. the common plant steroid  $\beta$ -sitosterol is not the title of an entry and cannot be located as such in the alphabetical listing in volume 1; the Name Index leads to the page and individual number of the steroid which reveals that  $\beta$ -sitosterol is the synonym of entry S-0355, namely stigmast-5-en-3-ol. The Molecular Formula Index allows entry into the dictionary via the molecular formulae of individual compounds which range from  $C_{16}H_{15}NO_2$  for 13-aza-18-norequilenin

through to  $C_{68}H_{112}O_{37}$  for agavasaponin H. Each steroid listed has its own unique Chemical Abstracts Service Registry Number and these are indexed in numerical order.

The Type of Compound Index lists all steroids in the dictionary under one or more headings which are based either on structure, e.g. androstanes, pregnanes, or on biological activity, e.g. anticancer steroids, anti-inflammatory steroids. There are 42 steroids listed which have anticancer activity. The Species Index lists all species which are named in the dictionary and these are arranged by alphabetical order of genus from *Abies alba* to *Zygadems sibiricus*. This index is particularly relevant to natural product workers which became apparent directly on receipt of the dictionary. Three steroids had been isolated in our laboratories from a species of *Croton* and we wanted to know whether they had been isolated previously by other workers. A quick check revealed that only one species, namely *Croton jatrophoides* is reported in the chemical literature as a source of one specific steroid, dumsin. Since there are more than 800 species of *Croton* and steroids are common constituents of plants, the dictionary clearly showed us how fragmentary our knowledge is, despite the extensive data provided within the dictionary. The Molecular Formula Index quickly provided the identity of our three steroids which proved to be known compounds. Had we obtained novel compounds then this would have been quickly revealed by using the dictionary.

The authors are to be congratulated, with the publishers, on producing these two extensive volumes which serve as a valuable reference source on steroid literature. Such information should be at hand in those colleges and universities, research institutes and individual companies where there are interests in steroids. These volumes are of particular importance to those organizations with pharmaceutical interests. The price means that the majority of individual scientists will not be able to purchase the volumes for their private use but I strongly recommend purchase by departments and by libraries. A 32 page sample of the dictionary is available on request to Chapman Hall and orders or enquiries from North America/Canada should contact RCH Inc, 29 West 35th Street, New York, NY 10001, USA.

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## Book Review

### Protein Immobilization. Fundamentals and Applications (Bioprocess Technology Series/14)

Edited by Richard F. Taylor

Published 1991 Marcel Dekker Inc., New York

392 pages

ISBN 0 8247 8271 2 \$110.00 USA and Canada, \$126.50 all other countries

When I first saw the title of the book and read the preface I was excited as I felt that this book was going to address a significant gap in the market which concerns non-enzyme proteins. Unfortunately it soon became apparent that most of the contents deals with enzyme immobilization and applications and therefore this book adds to a topic that is well represented in other books of this type.

The book is divided into two sections: five chapters on immobilization techniques and six chapters on applications. The first five chapters rake over some old ground as immobilization techniques are reviewed. A great many of the references in several of the chapters are 1970s and older, e.g. of 447 references in chapter 2, only 125 or so are 1980s. This gives an indication of the material being discussed. Chapter 4 does provide a good

insight into commercial support materials, but with only 11 references it does not provide a good resource for acquisition of further detail. Overall the first section provides some new and interesting material and reviews a lot of older material which may be fine for new researchers but is of no use to old hands who have read much of the same in other books.

The second section is disappointing given the aim in the preface to address protein applications. Three of the chapters specifically address enzyme applications, two have immobilized proteins in the title then proceed to discuss almost exclusively enzyme applications. Only one of the application chapters discusses non-enzyme proteins in the form of antibodies and their use in receptor-based biosensors.

The book provides an insight into the immobilization and application of enzymes with some lip service to non-enzyme proteins. For people who have some of the better books on immobilized enzymes, this book provides some new material, but not enough to warrant a purchase. For people who are new to enzyme immobilization, this book provides a reasonable introduction.

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