



Book Review

Carbohydrates in Drug Design Edited by Z. J. Witczak and K. A. Nieforth

The importance of carbohydrates and their conjugates in many biological processes is now recognized and has provided new carbohydrate-based lead compounds for investigation. *Carbohydrates in Drug Design* is a timely attempt to discuss recent developments in medicinal carbohydrate chemistry.

The book contains sixteen chapters, starting with a well-referenced overview by the editors of therapeutic areas in carbohydrate chemistry, in particular as anticonvulsant, antiviral, antidiabetic, antitumor, and antibacterial agents. This is a useful introduction which highlights some of the topics that are subsequently discussed in more depth. The main body of the book is really a collection of review articles by different authors on their particular subject. Three chapters (2–4) deal with recent work on sialosides as antimicrobial reagents and as selectin antagonists in the treatment of inflammation. Three more chapters are devoted to sulfated oligosaccharides, in particular, heparin, as antivirals, anticoagulant, and antithrombic compounds. A synthetic chapter on inositol polyphosphates is followed by a review on phosphatidylinositol analogues as inhibitors for phospholipase C. The last seven chapters cover different types of sugar analogs in drug development—carbasugars, azasugars, pyrimidine nucleosides analogs, sugar-modified anthracyclines, the octopyranoside antibiotic lincomycin, and finally antitumor polysaccharides from fungi.

The book is very heterogeneous in the range of disciplines it covers. A number of chapters deal entirely with chemical synthesis of a specific class of compounds, such as sialosides, inositol phosphates, or lincomycin, with only short mention of biological activities. Other chapters discuss structure-function relationships, lead development, and pharmacology in more detail, although not necessarily of the same compounds. No attempt appears to have been made to coordinate the chapters, and hence style and content vary considerably with some overlap between those that cover related area. The choice of topics and examples depends very much on the individual author's research interests, rather than being comprehensive. This reads more like a symposium-in-print and is not a textbook that covers or discusses medicinal carbohydrate chemistry systematically.

Nevertheless, the book contains a lot of interesting information on the subject and is authoritatively written by experts in their field. A number of the important topics in medicinal carbohydrate chemistry are covered, and each chapter is well referenced until 1995/6. The book should be a useful resource for any researcher in the glycosciences.

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