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Book Review

Polysaccharides in medicinal applications by S. Dumitriu (Ed.). New York: Marcel Dekker, 1996, 816 pp., $195.00. ISBN 0-8247-9540-7

It was during the early 1980s that significant advances were made in biochemistry relating to the manipulation of genes due to the widespread interest in nucleic acids. This resulted in the understanding and application of protein synthesis through genetic information. Although glycoconjugates are not directly synthesized by nucleic acids, but rather through the selective action of enzymes, saccharide chains are associated with biological functions. It was therefore also during this time that interest was beginning to develop in glycoscience as it was established that many natural oligo- and polysaccharides are involved in a number of biochemical reactions. The field of glycoscience is an extremely broad one requiring expertise from a number of disciplines and it is therefore essential that information is brought together covering the recent advances in the complex technologies.

This book *Polysaccharides in Medicinal Applications* focuses on the fundamental aspects of polysaccharides including structural and molecular aspects as related to their utilisation in medical applications and to specific medical applications of these complex biopolymers.

The book is divided into two sections, Part 1 deals with the chemical synthesis of polysaccharides, specific polysaccharides and derivatives including curdlan, cellulose, pullulan, and hemicellulose and finally gives an overview of hydrogels based on polysaccharides. Part 2 is orientated towards glycobiology and starts with a general introduction and chapters dealing with the structure and biosynthesis of glycoproteins, and the catabolism of glycoproteins. These initial chapters are then followed by ones dealing with the medicinal applications of specific oligo- and polysaccharides. The polysaccharides detailed include chitin and chitosan, dextran, fucan sulphates, and cyclodextrins with the medical applications including biomaterial membranes, drug delivery systems, bioartificial pancreas, and vaccines.

This is not a book to be read from cover to cover as the amount of information and detail is phenomenal. However, the comprehensive index and the 2800 references makes it extremely useful for sourcing information in specific areas. It is an indispensable reference work for all scientists working with polysaccharides be they organic chemists, carbohydrate chemists, biochemists, or medical chemists.

John F. Kennedy and Linda L. Lloyd
Birmingham Carbohydrate and Protein Technology Group,
The University of Birmingham,
Edgbaston,
Birmingham B15 2TT,
UK.

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