

chemical structure and physical behaviour of food polysaccharides which would be difficult to find elsewhere. Although this book does achieve its aims of providing information on the effect of the molecular structure of polysaccharides on their properties, functionalities and, hence, applications it also contains over 2800 references should additional information be required. It is for these reasons that the book is considered to be a valuable addition to the library of food technologists and carbohydrate chemists.

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Sucrose: Properties and Applications. Edited by M. Mathlouthi & P. Reiser. Chapman Hall, UK, 1995. 293 pp. Price £79.00. ISBN 0-7514-0223-0.

In world trade sugar is a major commodity and there is strong competition from alternative sweeteners and starch derived isoglucoses. Sugar production worldwide has been over 100 million tons per annum in recent years; it can be produced in temperate, tropical and subtropical zones, unlike many other foods.

Future markets for sugar depend on nutritional trends: sugar in many foods may replace fats, as overconsumption of fats is now considered a more serious health hazard than overconsumption of carbohydrates. The physical and chemical properties of sugar are still considered vital in adding bulk and taste to certain foods which would otherwise prove bland and unappetising. Thus, the market for sugar, both for food and non-food uses, is likely to remain buoyant in the long term.

This book has tried to gather data to consider the most important properties of sucrose in detail, and to provide a new insight into recent aspects of sugar studies and applications. The book considers in brief the economic aspects of sucrose and recent studies of sucrose structure in its crystalline form, and in aqueous solution, using modern tools like ^{13}C NMR are presented, along with calculations of molecular mechanisms. An overview of sucrose crystallisation and the structure and practical aspects of amorphous sugar are considered. A discussion of solution and rheological properties is also treated in detail. A discussion on the applications of sucrose is also dealt with in considerable detail, including information such as the compatibility of sucrose with other food ingredients and the enhancements of food flavour and the uses of sucrose as a raw material for chemical and enzymatic reactions.

This book is a good source of information to biologists, food scientists and sugar scientists and technologists, as it covers many, if not all, of the properties and applications of sucrose.

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Glycoproteins: New Comprehensive Biochemistry, Volume 29a. By J. Montreuil, J.F.G. Vligenthart & H. Schachter. Elsevier Science, Amsterdam, 1995. xxvii + 644 pp. Price US\$175.00. ISBN 0-444-82075-2.

Glycoproteins is the term used to describe the vast array of molecules that contain a protein and a covalently bound oligosaccharide. Glycoproteins are widely distributed in nature (present in animals, plants, microorganisms and viruses), and are involved in many important biological processes which include stabilization of protein conformation, protection against proteolysis and classification of blood types. *Glycoproteins* represents Volume 29a in the *New Comprehensive Biochemistry* series. It contains authoritative reviews on our present state of knowledge of glycoproteins.

The book is divided into two parts. The first introductory section begins with a history of glycoproteins which spans more than a century from 1865. It then moves on to discuss their structure, both primary and three dimensional, where the main tool used for analysis in both cases is NMR spectroscopy. This first section also includes a review of glycopeptide syntheses which are used as 'model' compounds in structural investigations of glycoproteins, and the biosynthesis of glycoproteins, which is by far the largest and most detailed chapter of the book.

The second part of the book is concerned with the more complex aspects of glycoproteins. It begins with a review of bacterial glycoproteins, which includes archaeobacteria as well as eubacteria, and then moves on to review glycolysation in yeast, plants and insects. The book concludes with a review of the glycoprotein family, where structure-function studies have been hampered by the lack of crystallographic data, and the carbohydrate moiety of vertebrate collagens.

This is an extremely informative and detailed volume. It is a useful reference source for anyone connected with this field and would be invaluable as part of a scientific or university library.

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Chemistry and the Living Organism. Edited by M.M. Bloomfield & L.J. Stephens. John Wiley, New York, USA, 1996. xxi + 672 pp. Price US\$23.95. ISBN 0-471-10777-8.

Chemistry is the study of the composition and interaction of substances. It informs you what substances are made of and assists you to understand how they behave. In fact, chemistry, both synthetic and natural, involves every aspect of your life. For instance, clothes which you put on are made mainly of synthetic materials. Your good health depends on chemicals which are in