

Book reviews

Enzymes in Food Processing. Edited by G.A. Tucker and L.F.J. Woods, Blackie and Son Ltd, Glasgow and London, 1991. x+288 pp. Price £69.00. ISBN 0-216-92977-6.

Enzymes, as functional ingredients either in partially purified form or as components of whole systems, have been used for several years in a variety of food processes. However, unsuitable reaction conditions, instability of the enzyme during processing, or the high cost involved in obtaining large amounts of sufficiently pure enzyme have limited the use of enzymes in the food industry.

'Enzymes in Food Processing' covers the basics of enzyme activity that are required to understand the use of enzymes. The general applications and limitations of enzymes in food processing as well as new technologies and how these may be applied to expand the use of enzymes in food processing are discussed in great detail. 'Enzymes in Food Processing' also provides information on specific industrial applications of enzymes in the food industry. The dairy, meat, baking, beverage, sugar and oil industries are extensively treated in several chapters of the book. The book also speculates on the increased use of enzymes in the future. The last chapter of the book considers the kinetics of enzymes in relation to their use as analytical reagents, followed by a description and discussion of the microbiological and non-microbiological applications in relation to food analysis. Future trends in enzyme-based clinical diagnosis with potential for applications in the food sector are also considered.

'Enzymes in Food Processing', backed by extensive literature reference, offers primary value for food technologists, chemists, biochemists and microbiologists working with enzymes as well as students of food science and those working in academic and research institutions.

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Glycoconjugates—Composition, Structure, and Function. Edited by H.J. Allen and E.C. Kisailus, Marcel Dekker, Inc., New York, 1992. viii+684 pp. Price US\$195.00. ISBN 0-8247-8431-6.

Various types of compounds consisting of carbohydrates covalently linked with other types of chemical constituents are classified under the general name of glycoconjugates. The major groups of glycoconjugates are the glycoproteins, glycopeptides, peptidoglycans, glycolipids, and lipopolysaccharides. They are ubiquitous in nature and are present in almost all forms of life: animals, plants, and microorganisms. The diverse

biological functions that these macromolecules perform, include among others, enzymatic catalysis, hormonal control, immunological protection, ion transport, blood clotting, lubrication, surface protection, structural support, cell adhesion, intercellular interaction and most importantly recognition in general.

Compared with proteins, lipids, and nucleic acids, carbohydrates constitute the most complicated set of biological polymers for structural characterization. Molecular parameters of ring size, anomeric configuration, position of linkage between monomers, sequence of sugar epimers or sugar types and branching all contribute toward structural diversity. All of these stereochemical and isomeric parameters confer biological activity.

The interest in glycoconjugates has arisen tremendously in the past decade. Systematic research on them has been conducted in various fields such as molecular biology, medicine, organic synthesis, organic analysis and genetic engineering, to gain a better understanding of the structural, biosynthetic data and functional role of glycoconjugates.

This book presents a practical overview of the significant contemporary information in the field of glycobiology, and integrates the structural and biosynthetic data with the functional role of glycoconjugates successfully. Without doubt this is good for the understanding of glycobiology. 'Glycoconjugates' contains 19 chapters, that discuss current approaches to elucidating oligosaccharide structures, the mechanisms of biosynthesis and turnover of these structures, the characteristics of macromolecules that interact with glycoconjugates; it presents the emerging role of molecular biology in the study of glycoconjugates, and presents plausible concepts concerning glycoconjugate function. This book also contains a chapter that presents a summary of the rules of nomenclature for various saccharides and glycoconjugates that will assist beginners in this field in understanding the scientific presentations.

Some minor points detract a little from this otherwise good book: The references on pages 190–202, 354–360, and 655–671 are of a different style from the others. Also the references on pages 98–102 and 515–519 are different from the rest of the book. Most parts of this book summarize significant up-to-date information in the field of glycobiology, but Chapter 6 contains information only up to 1987, and Chapter 16 up to 1988. Also, Chapter 19 and one or two others are too specialized for beginners in this field.

This book is a good source of information on new concepts, experimental approaches, and the biological significance of glycoconjugates, lectins, and other