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Book review

Advances in Macromolecular Carbohydrate Research, Vol. 2

R. Sturgeon (Ed.); Elsevier/Jai, 2003, x + 247 pp., ISBN 3-527-30574-2, Price 285 Euro

This volume of *Advances in Macromolecular Carbohydrate Research* follows the same principles used in the previous volume in dealing with significant advances in the understanding of the chemistry, biochemistry and biology of carbohydrates. Scientific publications in these fields continue to be published in ever increasing numbers and again the authors in this collection have submitted readable reviews, without attempting to provide exhaustive citations of earlier literature.

In recent years the most significant advances in carbohydrate research have been made in the knowledge of the structure and function of carbohydrates in the macromolecular state. Indeed work in this area has gone on in leaps and bounds reflecting what was, after all, a long overdue joining of the chemical and biological approach to such macromolecules. *Advances in Macromolecular Carbohydrate Research, Volume 2* covers a range of relevant topics.

Considerable progress has been made in the understanding of the yeast cell wall. Two chapters are devoted to these aspects. Although the molecular architecture of the cell wall of *Saccharomyces cerevisiae* is known in considerable detail, the organization of the cell wall polymers. De Nobel and Klis discuss the structure of O-linked carbohydrate chain and the function of protein O-mannosylation, including the roles in protein secretion, cell wall integrity and in the budding process.

Imberty et al. discuss the biosynthesis, structure and bioconformation of blood group carbohydrate antigens. Their review deals with the major ABO histo-blood group oligosaccharides and focuses on new features thus allowing new insights into the structures of these blood group oligosaccharides and the interactions with other molecules such as lectins and antibodies.

The synthetic achievements relating to the construction of carbohydrate-coated dendrimers have been reviewed by Nepgodiev and Stoddart. They demonstrate the progress made in designing and constructing glycodendrimers which are amongst the highest molecular mass synthetics carbohydrate-containing compounds.

Biotechnological developments in the use of chitin and chitosan are reviewed by Hirano. Chemical substitution of hydroxyl and amino groups of these two polysaccharides had been used to produce a variety of products in the form of bean fibres, hydrocolloids, hydrogels and microspheres.

The late Robert Sturgeon—'Bob'—clearly appreciated the value of molecular carbohydrate research in the understanding of the chemistry and biochemistry of life. He and his team have produced a volume which not only addresses those areas of the subject in which the editor/authors believe the most important work is being carried out for carbohydrate and glycoscientists researching the occurrence, modification and biological functionality of macromolecular carbohydrates, but is fascinating information for the general carbohydrate-orientated readers who wish to keep themselves up to date. A fitting volume suitably marking the end of a career of devotion by Bob to macromolecular carbohydrates.

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