Glycoscience: Chemistry and Chemical Biology I–III

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With contributions by numerous experts

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Preface

Attempts at understanding of the structure and function of sugars date back to the work of eminent scientists active at the turn of the19th/20th century. This field of research has developed into today's flourishing area of chemistry and biochemistry of carbohydrates. Over the years major scientific contributions have been associated with this research area and the results have had a strong impact on general chemistry.

At the end of the last century the significance of glycoscience, covering all aspects of the chemistry and chemical biology of carbohydrates and glycoconjugates, increased enormously owing to the challenge of interpreting complex natural processes at the molecular level.

Thus, the purpose of this comprehensive approach is to address and assist a broad readership ranging from graduate students to research scientists involved in glycochemistry and glycobiology, working in areas such as organic chemistry, biochemistry, molecular biology, immunology, and microbiology, as well as pharmaceutical, medicinal, agricultural, food chemistry, etc.

The special design of this timely and major modern work on glycoscience is intended to go beyond the collection of specialized reviews. Accordingly, the first general chapters are focussed on principles and methods, giving detailed insight into the current status of structure analysis, synthesis and mechanistic interpretation. Subsequent chapters deal with mono-, oligo-, polysaccharides as well as with the chemistry and chemical biology of glycolipids, glycoproteins, other glycoconjugates and glycomimetics, and they always involve in depth discussion of the biochemical, biological and biomedical background. Because of this presentation, the impact of this collection should be attractive for both specialists, and non-specialists, as well as for newcomers to glycoscience from borderline research areas.

For the editors the task to put together such a comprehensive treatise was feasible only after they could convince the leaders in the fields to contribute and write their chapters with absolute authority. If this work does fulfil the desired purpose of becoming a useful, comprehensive collection in the area of chemistry and chemical biology of glycoscience, many thanks will be due to all of the expert authors.

Bertram O. Fraser-Reid
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Joachim Thiem

July 2001

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