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BOOK REVIEW

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## Glycomics

(N. H. Parker and N. G. Karlsson, eds., in Series “Springer Protocols. Methods in Molecular Biology”, Vol. 534, Humana Press, 2009, 389 p., \$110)

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This book discusses methods of a comparatively new direction in science, which has been named glycomics. This area of research has to deal with an inherent level of complexity not seen in the other areas of applied biology. Glycomics is an analogous term to genomics and proteomics, and is the comprehensive study of complex carbohydrates and proteins. Glycomics is a subset of glycobiology, and it is a part of research directions in many biological and medical disciplines.

The book consists two parts with 26 chapters prepared by well-known experts from many countries. Part I (chapters 1-21) highlights structural data of glycans and is divided into sections: A, B, C, and D.

Section A (chapters 1-13) includes methodical protocols related to analysis of glycoprotein and proteoglycan structure. There are different approaches to determine the structure of both N- and O-linked glycans released from glycoproteins and the glycosaminoglycans (GAGS) released from proteoglycans. A wide variety of sample preparation, derivatization, chromatography, and mass spectrometric techniques are discussed. A remarkable feature of this part is that the methods are discussed based on available instrumentation, and a selection of protocols is provided in the book for the suite of instru-

ments already existing in research laboratories that want engage in glycomics without investment in expensive new instrumentation.

Sections B (chapters 14-18) and C (chapter 19) deal with glycopeptide analysis and O-GlcNAc modified proteins, respectively.

Bioinformatic tools for the analysis of the mass spectrometric data are discussed in section D (chapters 20 and 21).

The five chapters (22-26) of part II highlight carbohydrate–protein interactions. Here information on glycan arrays, mass spectrometry, NMR, antibodies, and small molecule inhibitors is discussed.

In the preface one of the editors of this book, Nicolle Packer, formulated the major goal of the book as an attempt to give readers knowledge about contemporary methods of investigation of the structure of glycan molecules to understand the complexity of their unique organization and biological role. Reviewing this book, I confirm the book fulfills the goal and I consider this book as an excellent practical guide to glycomics methods. Each method is described in great detail, and the whole book is excellent manual for many researchers in biochemistry, molecular biology, immunochemistry, biotechnology, and medicine.

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