

Chapman & Hall/CRC
Mathematical and Computational Biology Series

The development and use of informatics tools and databases for glycobiology and glycomics research have increased considerably in recent years. In addition to accumulating well-structured glyco-related data, researchers have now developed semi-automated methods for the annotation of mass spectral data and algorithms for capturing patterns in glycan structure data. These techniques have enabled researchers to gain a better understanding of how these complex structures affect protein function and other biological processes, including cancer.

One of the few up-to-date books available in this important area, **Glycome Informatics: Methods and Applications** covers all known informatics methods pertaining to the study of glycans. It discusses the current status of carbohydrate databases, the latest analytical techniques, and the informatics needed for rapid progress in glycomics research.

Providing an overall understanding of glycobiology, this self-contained guide focuses on the development of glycome informatics methods and current problems faced by researchers. It explains how to implement informatics methods in glycobiology. The author includes the required background material on glycobiology as well as the mathematical concepts needed to understand advanced mining and algorithmic techniques. She also suggests project themes for readers looking to begin research in the field.

Features

- Provides all the necessary background information, including glycan classes, motifs, and nomenclature
- Offers a complete list of relevant databases and resources on glycobiology
- Presents a wide range of methods, from computer theory and data mining to glycomics
- Discusses key points and ideas for potential research projects
- Describes sequence analysis and machine learning methods as well as glycomic technologies in the appendices to enable a quick understanding of the text



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