



Carbohydrate Recognition in the Immune System

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Message from the Guest Editors

Carbohydrate recognition plays a vital role in the activation and function of the immune system, but has remained understudied for the important reason that carbohydrates alone cannot bind thymus cells to activate B-cells to produce the highly specialized and matured immunoglobulin-G antibodies. With the advance of modern analytical techniques in glycoproteomics, a growing collection of rare glycan structures are being discovered, localized, and linked to diseases. Tumor-associated carbohydrate antigens found in metaplastic tissues, such as the embryonal Lex antigen in breast cancer, LacdiNAC in human gastric mucosa, and paucimannosidic glycans in pancreatic and colon cancer, are examples of known targets for lectins of pathogenic microorganisms, but also of carbohydrate-binding antibodies. However, our understanding about how our immune system and our microbiome react to aberrant glycosylation patterns on proteins and cells is still in its infancy.

In this Special Issue, we will focus on recent and rapidly growing progress in our knowledge of carbohydrate recognition in the immune system, by both exogenous and endogenous lectins and antibodies.





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