Glycans as Microbial IDs

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Our health depends on maintaining a functional microbiome while avoiding the propagation of pathogenic microbes. Our group seeks to understand the mechanisms of microbial control by focusing on a prominent feature of the cell's exterior—the carbohydrate coat. From humans to fungi to bacteria, all cells on Earth possess a carbohydrate coat. A critical role of this coat is to serve as an identification card. Our group has been examining the role of carbohydrate-binding proteins, lectins, in influencing our microbiota and in immune defense. This seminar will focus on understanding the basis of carbohydrate-protein interactions and how they are used to control microbes. We envision that our findings can lead to alternative means to combat pathogens, methods for rapid approaches to ID microbiota, and the development of new strategies to regulate microbiome composition to promote human health.