

# Abstract



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***Mass Spectrometric Investigations of Molecular Details  
That Impact Biological Functions***

Development of new drugs and diagnostic tools requires increased understanding of infection, cancer, and the immune system. Infectious agents usually gain entrance to their hosts through the interactions of surface molecules. The immune system is responsible for and exploits the interactions of proteins with one another and with glycans (and other classes). In order to explore these phenomena, to investigate how the body can combat challenges (even with sometimes deleterious consequences), and to utilize this knowledge to control disease, we now rely heavily on insight provided by mass spectrometry. This lecture will focus on mass spectrometry approaches that we are developing and using to elucidate critical pathways in the inter- and intra-molecular interactions that are important in infection, carcinogenesis, and neurodegeneration.