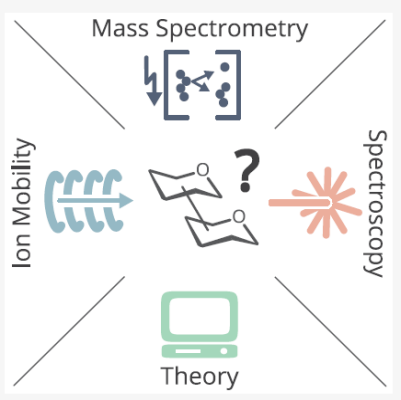
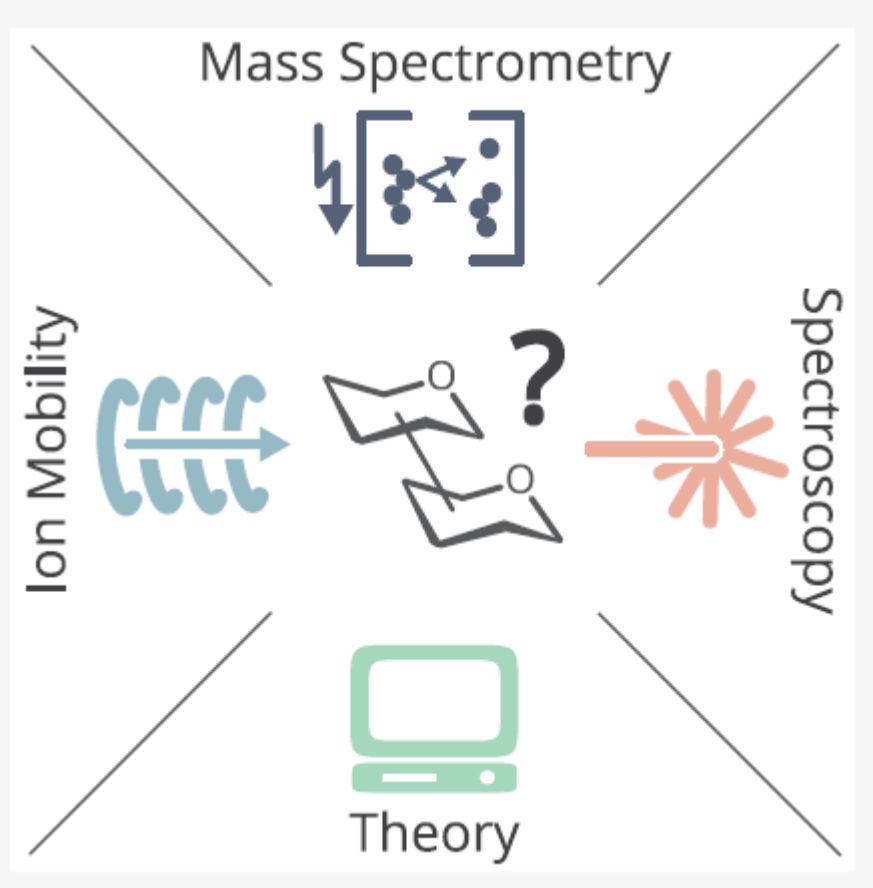


Mass Spectrometry-Based Techniques to Elucidate the Sugar Code

Description

Although glycans are essential to all living organisms, surprisingly little is known about the â??sugar codeâ?• and the biological roles of these molecules. The reason glycobiology lags behind its counterparts dealing with nucleic acids and proteins lies in the complexity of carbohydrate structures, which renders their analysis extremely challenging. Building blocks may differ only in the configuration of a single stereocenter and can be combined with the vast possibilities to connect monosaccharide units. They lead to an immense variety of isomers, which poses a formidable challenge to conventional mass spectrometry. In recent years, however, a combination of innovative ion activation methods, commercialization of ion mobilityâ??mass spectrometry, progress in gas-phase ion spectroscopy, and advances in computational chemistry has led to a revolution in mass spectrometry-based glycan analysis.



In their review, the authors focus on the above techniques that expanded the traditional glycomics toolkit and provided spectacular insight into the structure of these fascinating biomolecules.

Category

1. News