

Analysis of Disease-Related Glycoproteins by Using Glycomic Approaches

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A lot of attention has been recently put on glycomics, which is defined as the understanding of glycobiology at the cellular level. Since glycoproteins exist in complicated and heterogeneous forms, glycomes cannot be dealt with through conventional proteomic methodologies. It is necessary to establish the alternative strategy for analysing glycomes. Liquid chromatography/multiple tandem mass spectrometry (LC/MSⁿ) is widely recognized as a powerful tool for glycomics. Using LC/MSⁿ, we have developed three analytical methods for glycomics. These are an oligosaccharide profiling method where diverse oligosaccharides are separated and characterized, an isotope tag method for quantitative oligosaccharide profiling, and an identification method of glycopeptides which are attached to a carbohydrate epitope. In this symposium, we would like to introduce these methods and their applications to the analysis of disease-related glycomes.