Glycan analysis by isobaric aldehyde reactive tags and mass spectrometry.

Glycans play significant roles in physiological and pathological processes. Therefore, quantitative analysis of glycans has drawn much attention. In this study, we developed a novel method to analyze glycans by using a series of isobaric aldehyde reactive tags (iARTs). With the use of tandem mass spectrometry, our method enables the identification of glycans by using the accurate masses of iARTs. Two iARTs were previously reported for the analysis of glycans and their total ion current (TIC) ratio was used as a measure of the size of glycans. Here, we report the development of an additional set of four isobaric aldehyde reactive tags (iARTs). Two iARTs were designed to add a mass of 104 Da, and the other two were designed to add a mass of 142 Da. The use of two iARTs reagents, iARTs can be readily expanded to six-plex tags for quantitative analysis of six samples concurrently.

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