Method to Enrich Glyco-Peptides & Proteins for Analysis

A method to effectively enrich glycopeptides/proteins in order to increase detection rates

Georgia Tech inventors have created a method that will serve to further identify glycoproteins as effective biomarkers and targets for therapies and treatments. Boronic acid derivatives have been utilized to strengthen the binding, and the synergistic interactions between glycans and the derivative further enhance the interactions for reversible binding of all glycans in a sample. The experimental results have demonstrated that the boronic acid derivative is much more effective in enriching glycopeptides than well-known phenylboronic acid. This method proves more effective, resulting in the identification of almost 100% more N-glycosylation sites compared to the results obtained without the synergistic effect, especially for low-abundance glycoproteins. This method can be applicable to study glycoproteins in various types of samples.

Summary Bullets

- More effective - enrichment of glycoproteins and glycopeptides in complex biological samples, especially low-abundance ones
- Reversible binding - for intact glycoprotein and glycopeptide analysis

Solution Advantages

- More effective - enrichment of glycoproteins and glycopeptides in complex biological samples, especially low-abundance ones
- Reversible binding - for intact glycoprotein and glycopeptide analysis

Potential Commercial Applications

- Biomedical research and clinical tests for analyzing glycoproteins as disease biomarkers
- Producing treatments and therapies to improve health and prolong life

Background and More Information

Effective enrichment is essential for the analysis of glycoproteins. Because of the reversible interactions between glycans and boronic acid, boronic acid-based chemical methods have great potential in enriching glycopeptides. The method presented has significantly advanced the enrichment of glycopeptides—dramatically enhancing the

interactions between boronic acid and all types of glycans.

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IP Status

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Publications

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