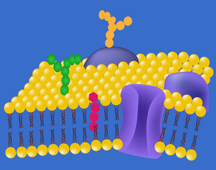
Creative Proteomics

GLYCOPROTEOMICS SOLUTIONS

Glycoproteomics is a specialized field within the broader domain of proteomics, focusing specifically on the comprehensive analysis of glycoproteins.Glycoproteins are proteins that have undergone post-translational modification through the attachment of carbohydrate molecules, known as glycans. These glycans are covalently linked to specific amino acid residues within the protein backbone, forming glycoprotein structures with diverse and complex functionalities.



Glycoprotein analysis commonly employs a bottom-up proteomics approach. This method typically involves a combination of specific enzymatic proteolysis followed by fractionation of glycoproteins by affinity chromatography or liquid chromatography and eventually glycopeptide analysis by MS. Creative Proteomics has command various strategies to enhance the enrichment of glycopeptides for comprehensive identification, and we have also developed multiple quantification methods including SILAC, iTRAQ/TMT, label-free, DIA.

What Can Glycoproteomics Service Provide?

1 Glycoprotein Separation and Purification

Isolation and purification of glycoproteins from complex samples are performed using Size-Exclusion Chromatography (SEC), Ion-Exchange Chromatography (IEX), and Affinity Chromatography to improve detection and analysis.

2 Glycoprotein Peptide Enrichment

Glycoprotein peptide enrichment uses techniques like Lectin Affinity Chromatography, Hydrazide Chemistry, and Boronate Affinity Chromatography to isolate and analyze low-abundance glycoproteins for glycosylation studies and biomarker identification.

3 Glycopeptide Mapping

Glycopeptide mapping uses UPLC for peptide separation, High-Resolution Mass Spectrometry (MS) for glycan identification, and HILIC for glycopeptide analysis, providing detailed characterization of glycosylation sites and glycan structures on proteins.

4 Glycoprotein Structure Analysis

- **Intact Glycoproteins Analysis:** Structural analysis of intact glycoproteins to determine their overall composition and modifications.
- **Glycan Composition Analysis:** Identification and quantification of glycans attached to glycoproteins.
- **Glycan Linkage Analysis:** Characterization of glycan linkages and branching patterns.
- **Sialic Acid Analysis:** Quantification of sialic acid content in glycoproteins.

5 Glycoprotein Quantification

Glycoprotein quantification uses isotope labeling and label-free techniques with mass spectrometry to provide precise measurements of glycoprotein concentrations, aiding in biomarker discovery and therapeutic target validation.

6 Protein Glycosylation Analysis

Comprehensive analysis of protein glycosylation patterns, including glycan structures, attachment sites, and variations.

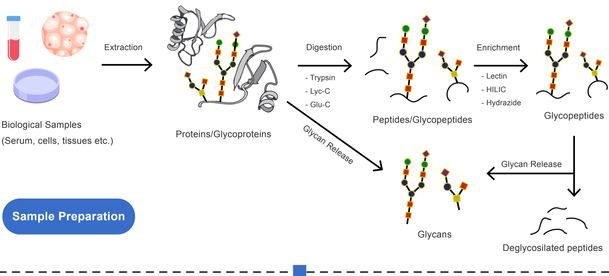
7 Glycosylation-Protein Interaction Analysis

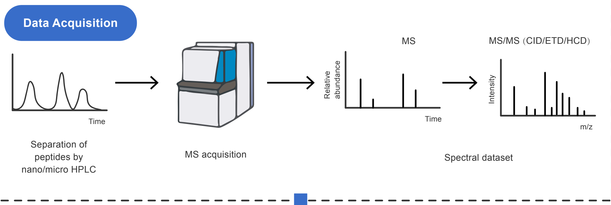
Analysis of glycosylation-protein interactions using mass spectrometry, lectin microarray, SPR, ITC, and LC-MS/MS to understand glycan effects on protein function and identify therapeutic targets.

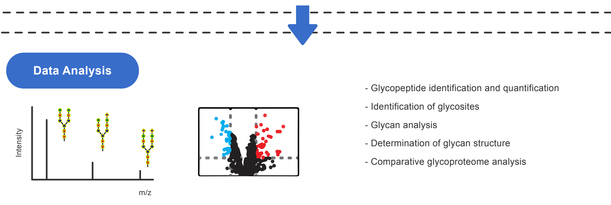
8 N- and O-Linked Glycosylation Mapping

- N- and O-Glycan Profiling Service: Comprehensive profiling of N- and O-linked glycans.
- N- and O-Glycosylation Site Analysis Services: Localization of glycosylation sites within protein sequences.
- N- and O-Glycan Linkage Analysis: Determination of glycan linkages and connectivity.
- N- and O-Glycosylation Site Occupation: Assessment of glycosylation site occupancy and occupancy levels.

Workflow for MS-based glycoproteomics in different complex biological samples







Why Choose Us?

- Professional detection and analysis capability: Equip specialized proteomics, quantification proteomics and bioinformation research team, strict quality control system, together with ultra-high resolution detection system and professional data pre-processing and analysis capability, ensure reliable and accurate data.
- High specificity: Optimization of experimental design and methods, N-Link Glycan Search, O-Link Glycan Search, or Glycan Search: N-Link+ O-Link.
- High stability and reproducible: Obtain consistent and reproducible inter- and intra- assay results for data analysis.
- High resolution and sensitivity: Triple TOF 5600, Q-Exactive, Q-Exactive HF, Orbitrap Fusion Tribrid™, etc.
- High selectivity: We can provide a wide range of multi-technological services and efficiently handle various types of samples, while remaining cost-effective and ensuring short turnaround times for your projects.

Contact Us

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