

# Membrane Proteomics Solutions

Cell membrane proteins perform important functions such as exchange of materials in and out of the cell, cell recognition and immune response, signal transduction and regulation, and energy transfer. To better understand their functions, it is necessary to reveal the characteristics of membrane proteins and monitor the modification and regulation of their expression. As many drugs target membrane proteins currently, research on them becomes even more important to help develop new drug targets and new treatments.

Changes in membrane proteins may cause a series of diseases.

- Identifying membrane proteins with abnormal properties can discover new therapeutic targets.

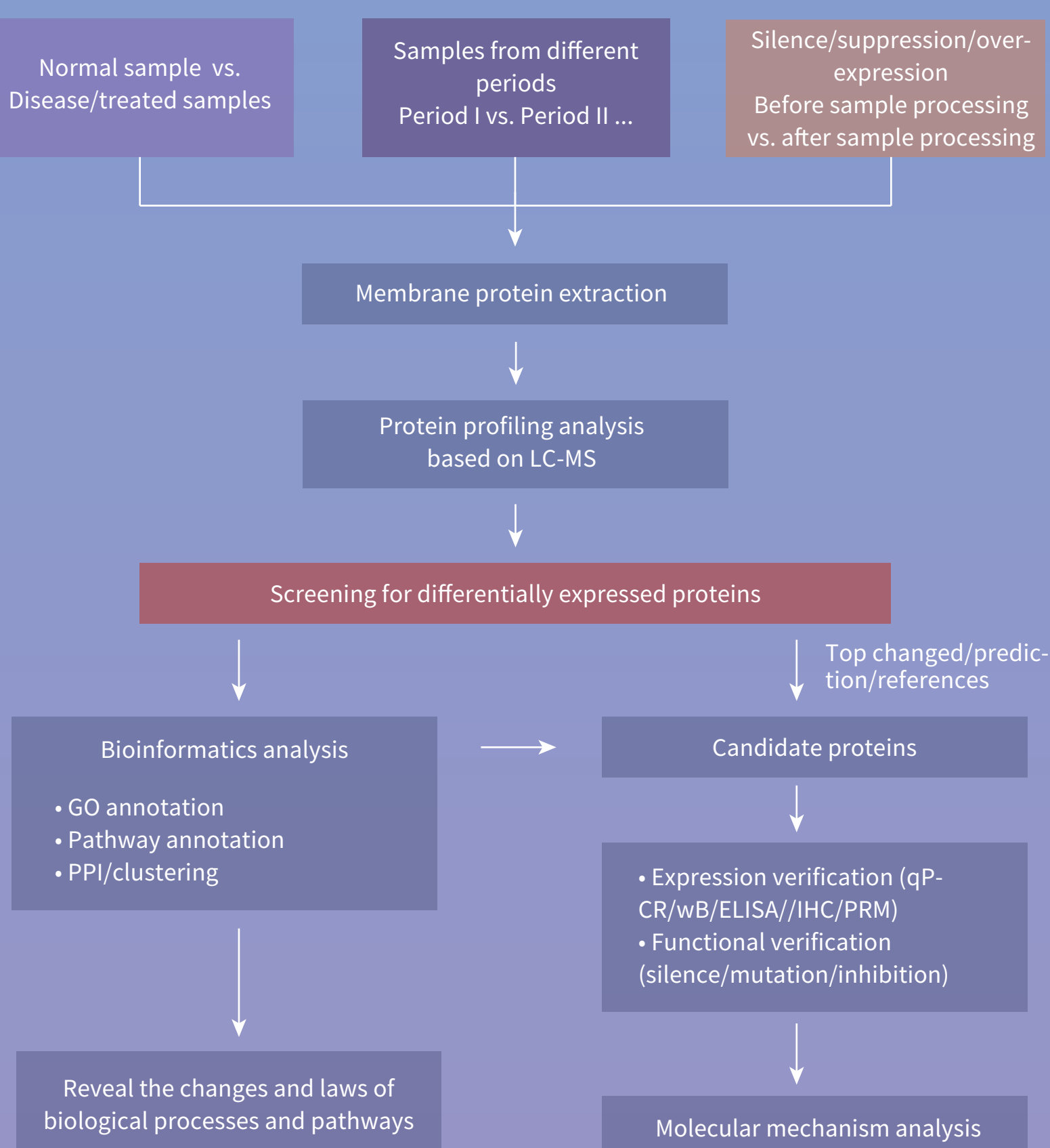
Clarify the toxicology mechanisms and establish a toxicological evaluation model at the level of membrane protein.

Membrane protein drug target analysis.

- New drug strategies can be proposed by targeting membrane proteins on the surface of living cells

Disease mechanism, drug mechanism and other basic research.

## Membrane Proteomics Approaches



## Membrane Proteomics Service

Enrichment of cell membrane.

- Density gradient centrifugation
- Antibody immunomagnetic bead purification
- Biotin labeling method

Identification of membrane proteins.

Two strategies: shotgun and top-down.

- Shotgun strategy: directly digest membrane protein samples. After digestion, the complex peptide mixture is further separated by liquid chromatography and identified by mass spectrometry according to the characteristics of peptide charge and hydrophobicity.

- The top-down strategy does not require enzyme digestion, and is directly identified by mass spectrometry. This method is more suitable for identifying protein post-translational modifications.

Quantitative analysis of membrane proteins.

- Label-based quantification uses SILAC, TMT, and iTRAQ.
- Label-free quantitative analysis includes SRM/MRM, PRM, and SWATH.

Bioinformatics analysis of membrane proteins.

- GO analysis
- Protein pathway analysis
- COG analysis
- GO enrichment analysis of differential proteins
- Pathway enrichment analysis of differential proteins
- COG analysis of differential proteins