

## Proteomics

The study of proteins in biological organisms is called proteomics. Proteins are produced in all the biological organisms naturally. They make up as one of the most important four major components in biological organisms such as proteins, carbohydrates, lipids and nucleotides. They perform many functions such as storage, muscle fibre formation, as the end product of foods digested they in turn help in digestion of food, DNA synthesis, metabolism, enzyme functions, Transport of other substances, immunity by antibody functions.

Proteomics as a word is derived from the word proteome that is the whole protein content or set of proteins. Proteins are studied by their extraction and purification methods such as Enzyme linked immunosorbent assay (ELISA), Two-dimensional gel-electrophoresis, two-dimensional gel electrophoresis (2D-PAGE), gas chromatography, liquid chromatography, ion exchange chromatography, affinity chromatography, immunoassay, detection by mass spectrometry, ionisation methods such as MALDI TOF (matrix assisted laser ionisation), electro-spray ionisation (ESI), two-dimensional differential gel electrophoresis 2-D DIGE, reverse phase protein micro arrays etc.

Applications of proteomics include personalised medicine, Biomarker discovery, Drug discovery and development, Systems Biology, Agriculture, Food science, Astrobiology. The study of proteomics is used along with other applied fields and other biological techniques for the betterment of health.

*Issued by:*

**NTHRYS OPC PVT LTD**

Ph: +91 - 8977624748

Web: [www.nthrys.com](http://www.nthrys.com)

Email: [smo@nthrys.com](mailto:smo@nthrys.com)

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