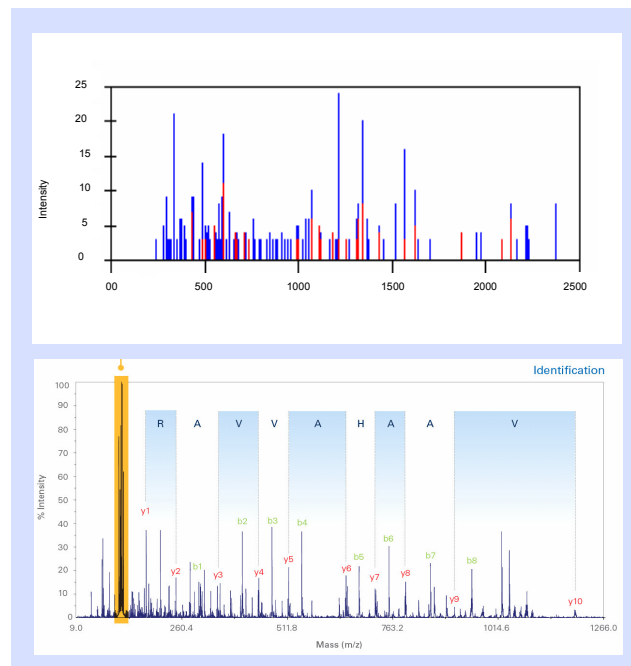


Biomarker Discovery: LC-MS label free Profiling

OBS offers LC-MS label free comparative peptide profiling as a service in order to discover differentially expressed proteins. This technique involves the removal of high abundance proteins from biological samples using immunodepletion columns or the use of bead-based combinatorial peptide libraries to enhance the relative concentration of low abundance proteins in crude samples. We are also able to enrich specific proteins such as glycoproteins or phosphoproteins. The remaining proteins are then digested with trypsin and are subsequently applied to a chromatography column coupled to a Mass Spectrometer. The peptides are eluted from the column and the intensities of peptides in different samples are statistically analysed (univariate and multivariate analysis). Any peptides that are statistically significant can then be identified by MS/MS.

Therefore, by comparing the relative abundance of peptides, it is possible to determine proteins that either up or down regulated while preserving post-translational modification information.

Immediately after protein identification, the results are further analysed using our proprietary database, DECIDER. The DECIDER Database is derived from the world's largest proprietary protein database and it is an enormously powerful tool in biomarker discovery programs as it is used as an *in silico* sieve to prioritize biomarkers according to specificity of the condition of interest. This dramatically reduces validation work required and accelerates biomarker discovery programs.



Standard LC-MS Label Free Biomarker Discovery Workflow

- 1 Deplete high abundance proteins or enrich low abundance proteins in crude samples
- 2 Digest depleted samples with trypsin
- 3 Separate peptides using LC and perform MS1
- 4 Statistically analyse data (univariate and multivariate analysis) for differentially expressed proteins
- 5 Identify statistically significant peptides using LC-MS/MS techniques
- 6 Prioritize specific biomarkers using our proprietary database, DECIDER

For further information on our services please contact:

Oxford Biomarker Services
94A Milton Park
Abingdon, OX14 4RY
United Kingdom
T: +44 (0) 1235 861 770
F: +44 (0) 1235 861 771

Email: info@biomarkerservices.com
www.BiomarkerServices.com

