

The Australian Proteome Analysis Facility (APAF)

TECHNOLOGY & SERVICES

PROTEIN CHEMISTRY

AMINO ACID ANALYSIS

Amino acid composition and/or total protein content of biological samples, as well as specific amino acid quantitation.

- S-PC-001: Free amino acid analysis of physiological samples (eg body fluids or culture media)
- S-PC-002: High sensitivity amino acid analysis of purified proteins using gas phase hydrolysis
- S-PC-003: Quantitative amino acid analysis of complex samples (eg food) using liquid hydrolysis
- S-PC-004: Bespoke amino acid quantitation

HIGH QUALITY EDMAN SEQUENCING

Protein N-terminal sequencing eg for biopharmaceutical QC, peptide-toxin analysis, protein-cleavage site assessment.

- S-PC-005: N-terminal amino acid sequencing

LIQUID CHROMATOGRAPHY

Multidimensional separation and quantitation of proteins eg A1/A2 b-casein content in dairy products.

- S-PC-006: RP-HPLC in acidic or high pH mobile phase buffer
- S-PC-007: Strong cation or anion ion exchange
- S-PC-008: Size exclusion
- S-PC-009: Affinity based
- S-PC-010: HPLC method development and validation

MONOSACCHARIDE ANALYSIS

HPAEC-PAD monosaccharide quantitation eg for antibody or biotherapeutic proteins analysis.

- S-PC-011: Monosaccharide (neutral/amino/acidic/sialic acid)

ARRAY TECHNOLOGY

GEL ELECTROPHORESIS AND WESTERN BLOTTING

1D and 2D gel electrophoresis separation of complex protein samples. Antigen-specific antibody detection available.

- S-AT-001: 1D and 2D separation of proteins
- S-AT-002: Western blotting

ARRAY ASSAYS

Quantitation of multiple cytokines, chemokines and growth factors simultaneously in body fluid, tissue or cell culture medium samples.

- S-AT-003: Multiplex bead based immunoassay for cytokines, chemokines and growth factors
- S-AT-004: Multiplex cytokine Array
- S-AT-005: Targeted protein ELISA

MASS SPECTROMETRY

PROTEIN IDENTIFICATION

Broad range of sample types including gel separated samples, affinity enriched samples, as well as complex biological mixtures.

- S-MS-001: Protein detection by 1D LC ESI MS/MS
- S-MS-002: Protein detection by 2D LC ESI MS/MS

DIFFERENTIAL PROTEOME PROFILE ANALYSIS

Quantitate differences between sample groups eg for biomarker research or protein-protein interaction discovery.

- S-MS-003: TMT/iTRAQ with isobaric chemical tags
- S-MS-004: SWATH-MS (SRM-like protein quantification)

SINGLE PROTEIN CHARACTERIZATION

For the analysis of monoclonal antibodies and bio-therapeutic protein products.

- S-MS-005: Intact mass analysis by LC ESI MS or MALDI TOF MS
- S-MS-006: Protein sequence confirmation or de novo sequencing
- S-MS-007: Post-translational modification analysis including disulphide bond, glycosylation, phosphorylation, methylation and acetylation analysis
- S-MS-008: Monoclonal antibody conjugation analysis

PHOSPHOPROTEOMIC ANALYSIS

Phosphopeptide specific comparative analysis after TMT labelled phosphopeptide enrichment.

- S-MS-009: Quantitative phosphoproteome profiling using TMT

PEPTIDE AND SMALL MOLECULE QUANTITATION

Bioanalytical studies for drugs and their metabolites, with or without stable isotope labelled (SIL) standards.

- S-MS-010: Quantification with standard
- S-MS-011: Metabolite Analysis using Biocrates AbsoluteIDQ® p400 HR Kit
- S-MS-012: Method development

MOLECULAR FORMULA CONFIRMATION

- S-MS-013: High mass accuracy determination of small molecules

BIOINFORMATICS

STATISTICAL ANALYSIS AND DATA MINING

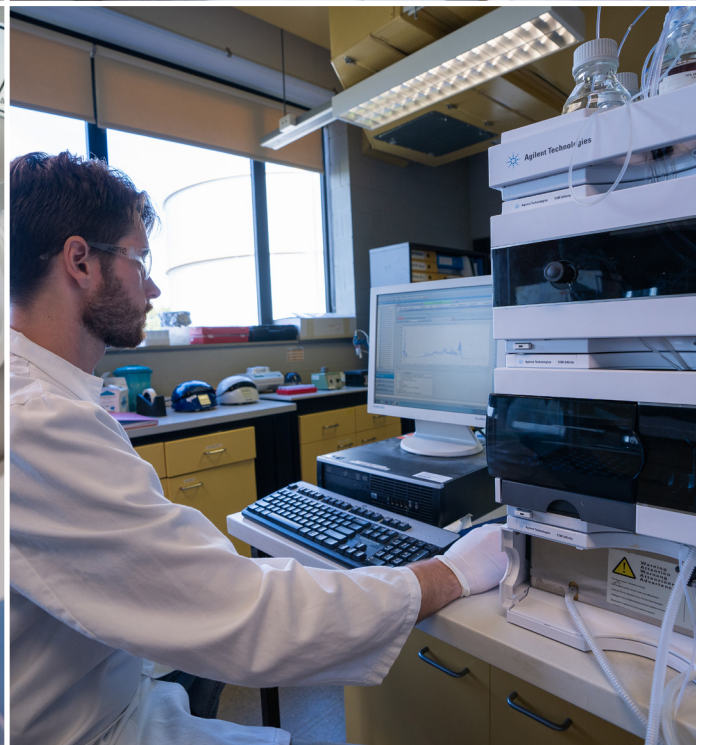
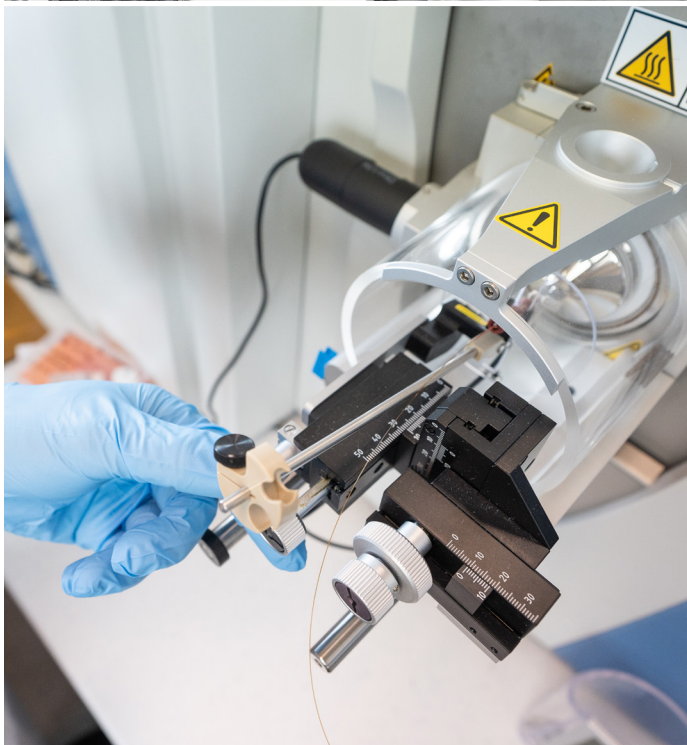
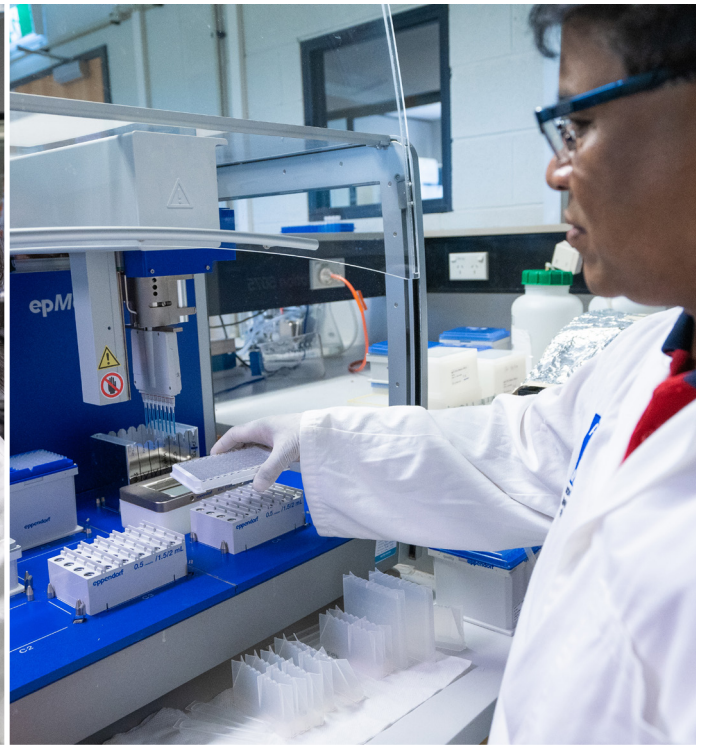
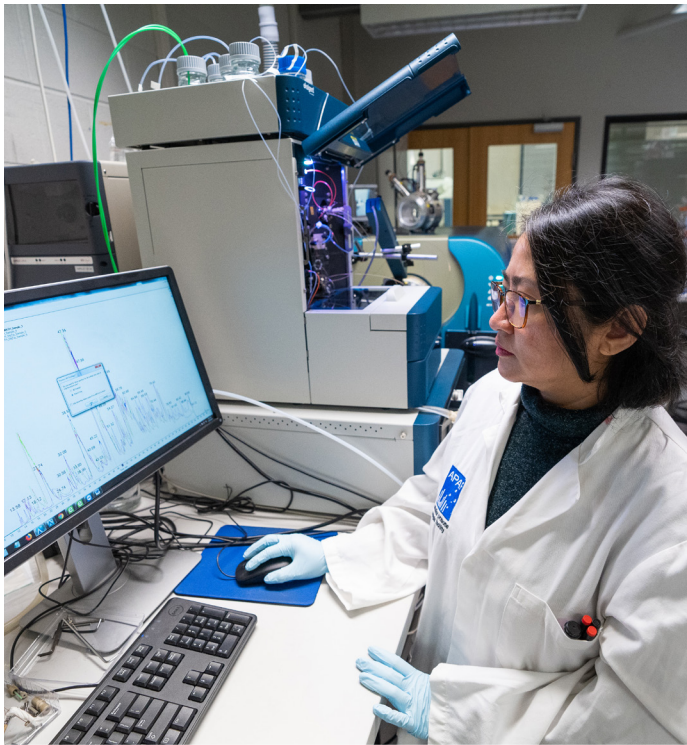
SWATH-MS, TMT and Multiplex Assay data analysis, including data quality assessment, clustering and identification of differentially expressed proteins.

- S-BIO-001: Statistical analysis (SWATH, TMT, array multiplex)
- S-BIO-002: Data mining and proteomics-data classification
- S-BIO-003: Network or pathway analysis and functional enrichment

CUSTOMISED BIOINFORMATICS SUPPORT

Bespoke statistical analysis, experiment design and power analysis for proteomics. Custom tool development, individually scoped for projects.

- S-BIO-004: Custom bioinformatics tool development



PHOTOS: Joanne Stephan



APAF is proudly accredited by the National Association of Testing Authorities (NATA) to ISO/IEC 17025 for research and development. The scope of accredited services can be found on the NATA website under Accreditation No. 20344.

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