Mission: To provide a complete platform for the identification and quantification of proteins using mass spectrometry

Technologies

**Pipelines for sample preparation from tissue/cells/IPs**
- Diagenode Bioruptor
- Precellys 24 tissue homogenizer
- Covaris sonicator

**State-of-the-art nano UPLC peptide separation coupled to Mass spectrometry (LC-MS/MS)**
- 2 x Waters NanoAcquity UPLC
- Thermo Orbitrap Fusion Lumos Tribrid
- Thermo Orbitrap Exploris 480

**Offline HPLC** - high pH peptide separation and fraction collection
- Agilent 1260

**Liquid handling – sample prep automation, phospho-enrichment**
- Agilent BRAVO

**Software and Bioinformatics tools**
- Matrix Science Mascot server
- Thermo Proteome Discoverer
- MaxQuant
- Biognosys Spectronaut/SpectroMine/SpectroDive/QuiC
- Proteome Science Scaffold
- Bioinformatics Solutions Inc. PEAKS
- Multiple in-house written procedures based on R/Bioconductor
- Isobarquant

**Usage**

- Method development for sample preparation and protein extraction from different biological matrices
- Optimized chromatographic separation of peptides offline (high pH) and online (low pH) with MS
- Usage or development of optimized MS methods for both label-free Data Directed Acquisition (DDA) and isobaric labelling quantification (eg for TMT-labelled samples (Tandem Mass Tags)) and Data Independent Acquisition (DIA) for multi-condition comparisons label-free
- Performing full proteomic experiments for facility users
- Providing training to allow users to process samples and data
- Performing data analysis and reporting results to facility users
- Full collaborators for projects from experimental design, optimization and contributing to manuscripts

Project Types

**Proteome profiles of model organisms in aging**

**Protein-protein interactions (GFP-Trap, proximity ligation Bio-ID/Apex)**

**Post-translational modification enrichment and quantification strategies**

**Low input, high throughput proteomics analysis**

Selected Publications


- Working with groups across all internal research areas
- Over 70 projects in 2018
- Collaborating/working on projects with external users (over 30 projects in 2018)