

Advanced Mass Spectrometry Facility: Capabilities and Applications

The **Advanced Mass Spectrometry Facility** in the School of Biosciences at the University of Birmingham combines state-of-the-art instrumentation with world-class expertise for biomolecular analysis.

The facility boasts:

- [Thermo Scientific LTQ FT Ultra](/facilities/advanced-mass-spectrometry/about/ft-icr.aspx) (</facilities/advanced-mass-spectrometry/about/ft-icr.aspx>)
- [Thermo Scientific Orbitrap Velos ETD](/facilities/advanced-mass-spectrometry/about/orbitrap.aspx) (</facilities/advanced-mass-spectrometry/about/orbitrap.aspx>)
- [Thermo Scientific TSQ Vantage](/facilities/advanced-mass-spectrometry/about/qqq.aspx) (</facilities/advanced-mass-spectrometry/about/qqq.aspx>)

All of our mass spectrometers are equipped with nano-LC separation systems. Capillary flow HPLC is also available on the LTQ FT Ultra and the TSQ Vantage. All instruments are coupled to chip-based nanoelectrospray systems (TriVersa Nanomate, Advion). The Orbitrap instrument offers high-field asymmetric waveform ion mobility spectrometry (FAIMS) capability.

Analyses Available:

The following analyses are offered routinely, however we welcome opportunities to collaborate on more complicated and/or longer term research projects.

- Protein identification: Bottom-up LC MS/MS analysis of protein digests. Both CID and ETD are available.
- Protein quantitation: Bottom-up LC MS/MS analysis of SILAC or iTRAQ labelled samples.
- Post-translational modification characterisation: Bottom-up LC ETD MS/MS analysis of protein digests. Phosphopeptide enrichment is also available. Top-down analysis of proteins up to ~60 kDa.
- Metabolomics analysis: Direct infusion or LC MS of complex metabolite mixtures.

