Details

Mass Spectrometry of Biomolecules at LMU (MSBioLMU)

The Mass Spectrometry of Biomolecules Service Unit (MSBioLMU) is part of the Department of Biology I at LMU Munich and provides analytical services to internal and external research institutions. The unit specializes in metabolomics and proteomics, identifying and quantifying small molecules and polypeptides across various sample matrices. A range of mass spectrometers and chromatography systems is available, including a QTOF-MS/MS (Bruker Impact), two timsTOF-MS/MS instruments (Bruker, timsTOF, timsTOF HT), and a GC-TOF-MS (Leco, Pegasus HT). Separation is performed via LC, nano-LC, or GC, but direct infusion analysis is also possible. The service includes sample measurements, consultation on experimental design, and data analysis. Data is processed using various software tools and bioinformatics to ensure accurate identification and quantification of metabolites and proteins.

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Host Institution

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http://www.uni-muenchen.de

Scientific Domain

Primary Subjects:
- Biology
- Chemistry

Secondary Subjects:
- Medicine
- Agriculture, Forestry, Horticulture and Veterinary Medicine

Category

Genomic, Transcriptomic, Proteomics and Metabolomics Facilities

Scientific Services

MSBioLMU offers analyses of metabolites (metabolomics) and proteins (proteomics). The polar fraction of a sample is fragmented using GC-TOF-MS (Leco, Pegasus HT) and annotated with databases. Unknown compounds are classified as "Unknown" and can be assigned to substance classes based on fragmentation patterns. Identification through standard matching is also possible. The nonpolar fraction is analyzed using LC-timsTOF-MS/MS (Bruker, timsTOF), enabling structural elucidation of individual compounds through additional fragmentation. Pigment and fatty acid analysis (lipidomics) are also available. Proteins are proteolytically digested, and peptides are analyzed using nano-LC-QTOF-MS/MS (Bruker, Impact II) or nano-LC-timsTOF-MS/MS (Bruker, timsTOF HT). Identification is performed with MaxQuant. Various sample matrices are analyzed, ranging from individual gel bands or gel spots to highly complex cell lysates or cell extracts.

Scientific Equipment

- LC-timsTOF-MS
- nanoLC-timsTOFHT-MS
- nanoLC-QTOF-MS

- GC-TOF-MS
- HPLC

Keywords

- Mass Spectrometry
- Metabolism
- Metabolomics
- Proteomics
- Plant Physiology

Networks

SFB TRR175 - The Green Hub
https://www.tr175.bio.lmu.de/

PhotoRedesign (Redesigning the Photosynthetic Light Reactions)
https://cordis.europa.eu/project/id/854126/de

Users per annum

Internal Users: 20
External Users in total: 17
External Users: 15
External Users in the EU: 2
External Users outside of EU: 0

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