

LipidCore Facility

SAMPLE SUBMISSION GUIDELINES



MEDIZINISCHE
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Lipid Core Facility

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1. Preface

Dear Lipid Enthusiast!

With the **LipidCore Facility** we grant access to specialized analytical technology and research support in the field of lipidomics. The facility is part of the **Medical University of Innsbruck**, operates within the Institute of Human Genetics.

Our facility offers a comprehensive range of lipid analysis services, including qualitative and quantitative lipid profiling, targeted and untargeted lipidomics, and customized analytical solutions for clinical and experimental studies. Detailed information about our analytical portfolio and available services can be found on our website at <https://i-med.ac.at/biochemgen/lipidcore.html>.

Here you will find important information regarding **sample collection, preparation, and shipping**.

If you have any questions or require assistance, please do not hesitate to contact us directly.

2. General Information

Address:

LipidCore Facility
Institute of Human Genetics
Medical University of Innsbruck
Peter-Mayr-Str. 1/1OG
6020 Innsbruck
Austria

Email: lipidcore@i-med.ac.at

Website: <https://i-med.ac.at/biochemgen/lipidcore.html>

Requests and sample submission for MUI members:

You can directly send us a request through our ticketing system by logging in with your q-ID at <https://lipidcoreticket.i-med.ac.at>

Note: If this is your first time registering with the LipidCore Facility you might need to click on the link again after the initial registration is complete to access the portal. If this system is temporarily unavailable or you encounter any issues, you may alternatively send your request by email to lipidcore@i-med.ac.at

Requests and sample submission for non-MUI members:

If you would like to measure samples at the LipidCore Facility simply write us an email at lipidcore@i-med.ac.at. To keep track of your request, we will subsequently add you to our ticketing system.

3. LipidCore Facility Team

The team of the LipidCore Facility consists of qualified staff with extensive experience in lipid analytics, mass spectrometry, and biochemical methodologies.

- **Assoc. Prof. Dr. Markus A. Keller:** Coordinator of the Lipid Core Facility, responsible for overall organization and scientific leadership.
 - **Phone:** +43 (0) 512 9003 70550
 - **Email:** markus.keller@i-med.ac.at
- **Yvonne Wohlfarter, PhD:** Postdoctoral researcher, specializing in experimental analysis, data evaluation, project coordination and interpretation, as well as administration and financial management.
 - **Phone:** +43 (0) 512 9003 71470
 - **Email:** yvonne.wohlfarter@i-med.ac.at
- **Matthias Villunger, MSc:** Technical staff member, responsible for laboratory operations, data analysis, and instrument maintenance.
 - **Phone:** +43 (0) 512 9003 70551
 - **Email:** matthias.villunger@i-med.ac.at

Furthermore, the LipidCore Facility closely works together with the Biochemical Genetic Diagnostics Laboratory. Through this close collaboration, the LipidCore Facility is also able to support clinical projects that rely on ISO 15189-accredited methods/workflows. For further details of the diagnostic service portfolio please visit: <https://www.i-med.ac.at/biochemgen/diagnostics.html>.

4. Infrastructure

The LipidCore Facility provides shared access to the modern, high-performance analytical infrastructure of Biochemical Genetics. Our analytical platforms combine high-resolution liquid chromatography with mass spectrometric detection, enabling precise identification and quantification of diverse lipid classes with a special focus on cardiolipins and phospholipids.

Liquid Chromatography Systems:

- **Thermo Fisher Vanquish UHPLC** - high-performance, stable system typically coupled to a Bruker TimsTOF Pro for advanced lipidomics.
- **Agilent 1290 Infinity II** - versatile, high-resolution LC system commonly paired with the Sciex QTRAP 6500.

Mass Spectrometry Systems:

- **Bruker TimsTOF Pro** - trapped ion mobility-time-of-flight MS for comprehensive lipid profiling and structural elucidation.
- **Sciex QTRAP 6500** - triple-quadrupole MS optimized for targeted quantitative lipid analysis.

Data Processing:

- Data evaluation is supported by specialized software such as **Bruker TASQ, MetaboScape, MZmine, MS-DIAL, and Sciex MultiQuant/Analyst.**

5. Sample Information

All samples submitted to the LipidCore Facility **must be clearly and uniquely labeled** to ensure accurate identification and full traceability throughout the analytical process.

We currently accept **cell culture samples, a broad range of mammalian tissues**, as well as **serum, plasma, and whole blood from most organisms**. If you intend to submit **unusual or specialized sample types**, please schedule a meeting with our team in advance to discuss feasibility, preparation requirements, and handling conditions.

The type of sample is directly linked to the feasibility of detecting specific lipid classes. The abundance of a given lipid species can vary by several orders of magnitude, depending, for example, on the tissue analyzed. The more prior knowledge can be provided regarding the lipid-related research question, the more accurate and informative the analytical results will be.

The required sample amount depends on the specific research question and the analytical approach. Please consult the facility staff beforehand to determine the appropriate quantity.

In general, cells derived from cell culture should be washed once with PBS, and tissue homogenates should contain an antioxidant such as BHT (butylated hydroxytoluene). To minimize lipid modification during extraction, we recommend conducting all sampling steps on ice, using pre-cooled reagents, and limiting oxygen exposure as much as possible.

6. Sample Storage and Shipping

Sample shipments are only accepted after project confirmation by the LipidCore facility. In general, sample deliveries are accepted **Monday to Friday between 8:00 and 16:00**, or at other times when arranged in advance.

Original residual samples and lipid extracts are **stored for one month after completion of the analysis** and after the final data analysis report has been sent out. If longer-term storage is required, this can be arranged upon request and may be subject to additional fees.