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Lipid Extraction for Mass Spectrometry Lipidomics

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We use this protocol and it's working

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Abstract

This protocol details how to perform lipid extraction using a methyl tert-butyl ether (MTBE)-based extraction method compatible with mass spectrometry.



Lipid Extraction

- 1 Add  200 μL of cold methanol and  800 μL of cold methyl tert-butyl ether (MTBE) to the samples. 
- 2 Vortex. 
- 3 Add  200 μL of water. Phase separation into aqueous and organic phases should occur. 
- 4 Centrifuge the extraction mixture at  10000 x g, 4°C, 00:10:00 to separate the organic and the aqueous phases. 

- 5 Collect the upper organic phase.
- 6 Dry it in a SpeedVac and store at  -80 °C until analysis.
- 7 For mass spectrometry analysis, reconstitute the samples with  20 μL -  40 μL of acetonitrile/isopropanol/water in a 65:30:5 ratio (v/v/v).

Note

For LC-MS measurement, a C8 column (Luna 3u, 2 × 100 mm, 3.0 μm , Phenomenex) is recommended. DMPC gets stuck in the C18 column.