



UC Davis MMPC-Live Protocol

Analysis of Metabolites from Tissue, Feces or Other Fluids by Mass Spectrometry

Version: 1.0

Revision Date: 11/6/2023

Replaces version:

Edited by: Michael Goodson & Trina Knotts - UC Davis Metabolism & Metabolic Health Core

[Summary](#)

[Reagents and Materials](#)

[Protocol](#)

[Reagent Preparation](#)

Summary:

Analysis of small molecule and lipid metabolites can reveal changes that can provide mechanistic insights into metabolic changes. Various liquid chromatography (LC) and gas chromatography (GC)-couple mass spectrometry (MS) methodologies can be employed to .

Reagents and Materials:

<i>Reagent/Material</i>	<i>Vendor</i>	<i>Stock Number</i>
Screw cap 2ml sample vials		
Serum or plasma collection vials (for blood)		

Protocol:

1. Plasma, serum, urine or feces (collected either from live mice or at necropsy), intestinal contents or tissues (*e.g.* liver, adipose tissue or muscle; collected at necropsy) should be collected in 2 ml screw cap tubes (to minimize loss of volatile metabolites like acetate) and snap frozen using ethanol/dry ice or other suitable method.
2. Frozen samples are stored at -80°C until analysis.
3. Samples are extracted and analyzed by the UC Davis West Coast Metabolomics Center (WCMC; <https://metabolomics.ucdavis.edu/core-services/assays-and-services>). The WCMC can perform a number of untargeted analyses, as well as more targeted analysis, including bile acids, steroids, oxylipins , very short-chain fatty acids and stable isotope tracer analysis. Untargeted analyses include:
 - Primary Metabolism by GC-TOF MS
 - Complex Lipids by BEH C18-QTOF MS/MS
 - Biogenic amines by HILIC-QTOF MS/MS

Reagent Preparation:

None.