

Sample Prep & QC for Metabolomics & Lipidomics — Hands-on

Get sample preparation and quality control right before you ever run the instrument. This module focuses on pre-analytical variables, extraction workflows, internal standards, and end-to-end QC design for metabolomics and lipidomics so that downstream peak picking, statistics, and biology sit on a robust analytical foundation.

Sample Prep & QC for Metabolomics & Lipidomics

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Session 1

Fee: Rs 8800 [Apply Now](#)

Pre-Analytical Variables & Sample Collection

Pre-analytical phase and its impact on metabolite stability

[temperature & freeze-thaw](#) [time to processing](#)
[additives & tubes](#)

Collection protocols for key matrices

[plasma vs serum](#) [urine & fecal samples](#) [tissues, cells & media](#)

Aliquoting, storage and chain-of-custody basics

aliquot strategy **biobank labelling** **metadata capture**

Session 2

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Extraction Workflows & Internal Standards

Protein precipitation and metabolite extraction for LC-MS/GC-MS

methanol / acetonitrile **biphasic extraction** **phase separation tips**

Lipid extraction strategies and carryover prevention (overview)

Folch / Bligh & Dyer **SPE clean-up** **plastic vs glassware**

Internal standards, surrogates and spike-in strategy

isotopically labelled standards **recovery assessment** **normalization anchors**

Session 3

Fee: Rs 14800 Apply Now

QC Strategy, Batches & System Suitability

QC sample types and their roles in metabolomics runs

pooled QC **process blanks** **solvent blanks & spikes**

Batch layout, run-order design and drift monitoring

interleaved QCs **conditioning injections** **carryover checks**

System suitability and basic acceptance criteria (concepts)

retention time windows **peak shape & intensity** **CVs in QC samples**

Session 4

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Mini Capstone: SOP & QC Map for a Study

Drafting a sample prep SOP for a chosen matrix and platform

Theory + Practical

Designing QC and batch layout for a real or mock cohort

placement of QCs **blank and spike strategy** **accept / repeat rules**

Deliverables: SOP, batch sheet and QC checklist

sample prep SOP (PDF/Word) **run-order & batch sheet (CSV)** **QC and suitability checklist**