LC-MS & GC-MS Workflows for Untargeted Metabolomics — Hands-on

Learn how to plan and execute robust LC–MS and GC–MS runs for untargeted metabolomics. This module connects chromatographic choices, ionization and acquisition settings, batch layout and QC strategy so that you can consistently generate high quality raw data for downstream peak detection, alignment and statistical analysis.

LC-MS & GC-MS Workflows for Untargeted Metabolomics

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Session Index

Session 1

Fee: Rs 8800 Apply Now

LC–MS / GC–MS Platforms & Untargeted Strategy

Instrument landscape for metabolomics LC–MS and GC–MS

triple quadrupole **QTOF / Orbitrap (overview)** **quadrupole GC–MS**

Untargeted vs targeted thinking in LC–MS / GC–MS studies

discovery profiling **coverage vs sensitivity trade off** **panel and follow up design**

Ionization and polarity modes for metabolite classes

ESI positive / negative **APCI (concepts)** **polarity switching and coverage**

Session 2
Fee: Rs 11800 Apply Now

Chromatography, Gradients & MS Acquisition

LC method basics for untargeted metabolomics

HILIC vs RP columns **mobile phase additives** **gradient shape and length**

GC method basics for metabolomics after derivatization

column selection **temperature programs** **carrier gas and flow**

MS acquisition modes for untargeted data

full scan high resolution **data dependent MS and MS (overview)** **basic parameter ranges**

Session 3
Fee: Rs 14800 Apply Now

Run Setup, Batches & Basic Troubleshooting

Preparing the sequence: samples, QCs, blanks and standards

conditioning injections **interleaved pooled QCs** **system suitability and calibration**

Monitoring key metrics during the run

retention time stability **peak shape and intensity** **QC CVs and drift plots**

Common LC–MS / GC–MS issues and first line fixes

clogging and pressure alerts **signal loss and noise**

carryover and contamination

Session 4

Fee: Rs 18800 Apply Now

Mini Capstone: Untargeted Run Plan & Methods Sheet

Designing an LC–MS or GC–MS untargeted run for a cohort

Theory + Practical

Documenting chromatography, MS parameters and batch layout

method sheet for LC / GC | sequence file plan | QC and blank placements

Deliverables: method description, sequence map & QC summary

LC–MS / GC–MS methods sheet | run-order and batch sheet (CSV) | QC strategy documentation