Single Cell Proteomics — SCoPE MS and TMTpro — Hands-on

Explore how single cell proteomics workflows extend quantitative proteomics down to ultra low input samples. This module introduces single cell proteomics concepts, SCoPE MS and TMTpro style multiplexing ideas, carrier channel logic, data acquisition considerations and how to read single cell proteome maps for biological questions.

Single Cell Proteomics — SCoPE MS and TMTpro

Help Desk · WhatsApp

Session Index

Session 1

Fee: Rs 8800 Apply Now

Single Cell Proteomics Concepts & Challenges

Why single cell proteomics is different from bulk proteomics

ultra low input material idea **cell to cell heterogeneity** **sensitivity and noise challenges**

SCoPE MS and TMTpro concepts at a glance

isobaric tagging and multiplexing idea **tagging single cells and references** **reading out channels in MS2**

level

Biological questions suited to single cell proteomics

cell state and differentiation paths | tumour heterogeneity concepts | rare cell population signatures

Session 2

Fee: Rs 11800 Apply Now

Sample Prep & Multiplexing Logic (SCoPE / TMTpro)

Conceptual single cell isolation and lysis workflows

sorting and picking cells idea | minimizing losses in tiny volumes | compatibility with downstream tagging

SCoPE MS style carrier and reference channel logic

carrier proteome boosting signal | balancing carrier and single cell ratios | reference channels for batch linkage

TMTpro multiplexing patterns for single cell plates

layout of cells, carriers and references | plates, batches and study designs | avoiding confounding in channel mapping

Session 3

Fee: Rs 14800 Apply Now

Acquisition, Signal Boosting & Quant Concepts

Ideas for LC–MS/MS methods in single cell runs

gradients, loading and peak capacity | instrument duty cycle concepts | choosing DDA or DIA at high level

Carrier channel effects on identification and quant thinking

increased identification depth idea | ratio

compression concept **tradeoff between depth and quantitative accuracy**

Quantitative features for single cell proteomics conceptually

channel intensities and normalization ideas **handling missing values and zeros** **global vs local scaling concepts**

Session 4

Fee: Rs 18800 Apply Now

Study Design, QC & Biological Interpretation

Designing single cell proteomics studies on paper

theory plus planning worksheet

QC concepts for single cell plates and batches

carrier and reference stability checks **cell quality and library size ideas** **batch effect detection concepts**

From single cell proteome matrices to biology

dimensionality reduction and clustering ideas **linking proteome clusters to phenotypes** **summarizing results in figures and tables**