

Gel-Based Proteomics — 2D Gel SDS-PAGE and Spots — Hands-on

Gain practical skills in gel-based proteomics using 2D gel electrophoresis (IEF + SDS-PAGE) for protein separation, visualization and spot-level analysis. You will learn end-to-end workflows from sample preparation, rehydration and IEF to second-dimension separation, staining, imaging, spot picking and in-gel digestion for downstream identification by MS.

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Session 1

Fee: Rs 8800 [Apply Now](#)

2D Gel Proteomics Concepts & Experimental Design

Overview of gel-based proteomics vs LC-MS workflows

[1D vs 2D electrophoresis](#) [IEF + SDS-PAGE separation](#)
[expression profiling & biomarkers](#)

Experimental design for 2D gel studies

[biological & technical replicates](#) [dye choice &](#)
[staining strategy](#) [reference gels & normalization](#)

Instrumentation & consumables overview

IEF system & IPG strips SDS-PAGE units imaging
scanners & software

Session 2

Fee: Rs 11800 Apply Now

Sample Preparation, Rehydration & IEF

Protein extraction for 2D gels

chaotropes & detergents removing salts & nucleic
acids compatible buffers for IEF

IPG strip rehydration & sample loading

linear vs nonlinear pH gradients passive / active
rehydration sample volume & protein load

IEF run programming & QC

stepwise voltage ramp focusing criteria strip
handling after IEF

Session 3

Fee: Rs 14800 Apply Now

Second-Dimension SDS-PAGE, Staining & Imaging

Equilibration and SDS-PAGE casting

DTT / iodoacetamide steps gradient gels vs single %
strip placement & sealing

Gel staining and visualization options

Coomassie / silver staining fluorescent stains
(concepts) background reduction & contrast

Imaging and basic gel quality assessment

scanner settings & dynamic range streaking & spot

resolution **archiving image files**

Session 4

Fee: Rs 18800 Apply Now

Spot Picking, In-Gel Digestion & Mini Capstone

Spot detection concepts and picking strategy

Theory + Practical (demo / guided)

In-gel digestion workflow for MS identification

excising spots & destaining **trypsin digestion in-gel**
peptide extraction & cleanup overview

Mini capstone: from 2D gel to MS-ready spot digest

experiment worksheet **gel image & spot map**
handover sheet for MS core