Protein Complexomics — CoIP AP MS and BioID — Hands-on

Learn how to plan and interpret protein complexomics experiments built around CoIP, affinity purification mass spectrometry (AP MS) and proximity labeling approaches such as BioID conceptually. This module focuses on bait and control design, pulldown layouts, interaction scoring logic and how to summarize complexomes as interpretable interaction networks for biology and discovery.

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Session 1

Fee: Rs 8800 Apply Now

Complexomics Foundations & Use Cases

What complexomics aims to measure in cells

protein complexes and interaction partners **core complexes vs accessory interactors** **context and condition dependent assemblies**

CoIP, AP MS and proximity labeling at a glance

pulldown based vs labeling based logic | bait centric view of interactomes | steady state vs neighborhood information

Where complexomics fits in discovery workflows

validating candidate interactions | mapping pathway modules | feeding networks and structural models

Session 2

Fee: Rs 11800 Apply Now

CoIP / AP MS Pulldown Design

Bait selection and tagging concepts

endogenous vs tagged bait idea | epitope tags and fusion placement | expression level and localization thinking

Pulldown buffers, stringency and specificity tradeoffs

maintaining complexes vs removing background | detergent and salt conceptual choices | on bead vs elution digestion ideas

Control and replicate layout on paper

empty tag / IgG controls | biological vs technical replicates | batching and blocking concepts

Session 3

Fee: Rs 14800 Apply Now

BioID, Controls & Enrichment Logic

Proximity labeling concepts (BioID style)

enzymatic tagging of nearby proteins | bait centric local neighborhood view | time and labeling window thinking

Control design for proximity experiments

inactive enzyme or mislocalized controls **expression matched backgrounds** **filtering neighbourhood vs global binders**

Enrichment, capture and LC–MS/MS ideas

tag capture and wash concepts **digestion and peptide level readout** **link to label free or isobaric quant logic**

Session 4
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Interaction Scoring, Networks & Readouts

Conceptual scoring of specific vs background binders

theory plus planning worksheet

From bait centric tables to interaction networks

adjacency and edge list thinking **degree, hubs and modules concepts** **mapping onto known PPI resources**

Summarizing complexomics for biology and review

network diagrams and complex cartoons **key tables of interactors and scores** **clear methods and control reporting**