

Multi-Omics Integration with Glycomics — Hands-on

Learn how to combine glycomics with other omics and clinical data for systems-level insights. This module covers glycan feature engineering, linking glycan profiles to proteomics, transcriptomics and metadata, and applying multivariate, network and pathway approaches to build integrated glyco-centric models and hypotheses.

Multi-Omics Integration with Glycomics

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Session 1

Fee: Rs 8800 [Apply Now](#)

Glycomics Features & Data Structures

Glycomics data types and feature levels

[released glycans and glycoforms](#) [glycopeptides and site level features](#) [trait style summaries \(sialylation, fucosylation\)](#)

Tidy representations of glycomics matrices

[sample x feature tables](#) [long vs wide formats](#) [linking IDs and metadata fields](#)

Preprocessing and harmonization before integration

normalization and scaling of glycan features | batch
correction basics | handling missingness and
detection limits

Session 2

Fee: Rs 11800 | Apply Now

Linking Glycomics with Proteomics & Transcriptomics

Joining glycomics, proteomics and expression data

sample ID mapping and QC | protein centric vs sample
centric joins | gene/protein/glycan identifier mapping

Relating glycan traits to protein and gene features

correlation and association analyses | linking to
glycosyltransferase expression | connecting to
pathway and ontology terms

Integrating clinical covariates and phenotypes

binary and continuous outcomes | adjusting for age,
sex and BMI | stratified analyses and subgroup views

Session 3

Fee: Rs 14800 | Apply Now

Integration, Networks & Pathways

Multivariate and machine learning integration approaches

PCA and PLS-based integration | sparse models and
feature selection | simple predictive models using
glycan traits

Network and correlation views around glycan features

co variation networks of glycans and proteins | hub
features and communities | overlaying clinical
phenotypes

Pathway and ontology enrichment around glycan signatures

linking to glycosylation and metabolic pathways

using Reactome/KEGG style resources **summarizing integrated biological stories**

Session 4

Fee: Rs 18800 Apply Now

Mini Capstone: Multi-Omics Glyco Integration

Working with a small glycomics + proteomics/transcriptomics dataset

Theory plus Practical

Building an integrated feature set and simple model

joining matrices and harmonizing scales **selecting**

key glycan and non glycan features **basic clustering or classification workflow**

Deliverables: integrated table, plots and biological summary

CSV or XLSX integrated feature matrix

ordination/network/pathway style plots **short PDF or PPTX narrative of findings**