

Sialylation, Fucosylation & Clinical Glycan Biomarkers — Hands-on

Explore how terminal sialylation and fucosylation signatures reflect inflammation, cancer, immune regulation and biotherapeutic quality. This module links glycobiology concepts to LC-MS based released glycan and glycopeptide workflows, and shows how to derive quantitative sialylation and fucosylation metrics suitable for clinical glycan biomarker panels and CQAs.

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Session 1

Fee: Rs 8800 [Apply Now](#)

Clinical Glycobiology of Sialylation & Fucosylation

Sialic acid linkages, positions and functional themes

[alpha2-3 vs alpha2-6 vs alpha2-8 linkages](#) [Neu5Ac vs other sialic acids](#) [charge, half life and masking effects](#)

Core and outer arm fucosylation patterns

[core fucosylation basics](#) [Lewis type motifs and](#)

selectins **branch and antenna specific fucose**

Clinical and biotherapeutic relevance of terminal glycans

cancer and inflammation markers **antibody effector function and half life** **acute phase and metabolic disease signatures**

Session 2

Fee: Rs 11800 Apply Now

Analytical Workflows for Terminal Glycan Features

Released glycan workflows focused on sialylation and fucosylation

derivatization strategies for sialic acids **stabilizing labile linkages** **column and gradient choices for terminals**

Glycopeptide level views of terminal patterns

site resolved sialylation and fucosylation **fragmentation for linkage and position hints** **multi attribute monitoring perspectives**

MS signals and diagnostic ions for terminals

oxonium ions associated with sialylation **fucose related fragment patterns** **checking for desialylation or loss**

Session 3

Fee: Rs 14800 Apply Now

Biomarker Panels, Metrics & Statistics

Defining sialylation and fucosylation metrics

sialylation index per protein or sample **core vs outer arm fucose ratios** **galactosylation and antenna context**

From quantitative tables to clinical glycan panels

feature selection and composite scores **reference ranges and cut offs** **batch and instrument effect handling**

Basic diagnostic and prognostic performance checks

ROC curves and AUC **sensitivity, specificity and calibration** **visual summaries for clinical teams**

Session 4

Fee: Rs 18800 Apply Now

Mini Capstone: Clinical Glycan Signature Panel

Build a small sialylation and fucosylation signature on example data

from LC-MS tables to biomarker candidates

Generate visual and tabular outputs for clinical review

panel summary plots and heatmaps **simple score or index derivation** **narrative summary for non specialists**

Deliverables and documentation set

curated biomarker table **figures ready for slides or reports** **notes on validation and next steps**