Glycan Structures, Annotation & Symbolic Representations — Hands-on

Learn how to read, describe and annotate complex glycan structures in a way that is both human interpretable and machine readable. This module covers structural motifs, branching and heterogeneity, along with the main nomenclature and symbolic systems used in modern glycomics databases and visualization tools.

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Session Index

Session 1

Fee: Rs 8800 Apply Now

Core Glycan Structures and Motifs

From monosaccharides to simple oligosaccharides

disaccharide examples **linkage patterns** **reducing and non reducing ends**

Common core motifs in N and O glycans

N glycan core structure overview **O glycan archetypes** **high level classification**

Isomerism and structural diversity in glycans

constitutional vs stereoisomers | positional isomers | impact on biological recognition

Session 2

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Branching, Microheterogeneity and Topologies

Branching patterns and tree like representations

biantennary and triantennary | outer arm elaboration | topology terminology

Glycan heterogeneity and microheterogeneity

site occupancy variation | composition vs structure | population level profiles

Topological descriptions and graph based views

nodes and edges as residues and linkages | isomorphism concepts | links to database storage

Session 3

Fee: Rs 14800 Apply Now

Notation Systems: IUPAC, GlycoCT and WURCS

IUPAC and short hand glycan descriptions

monosaccharide codes | linkage and position notation | branching syntax

GlycoCT and WURCS for machine readable encoding

GlycoCT structure blocks | WURCS linear strings | use in glycan databases

Annotation workflows and conversion tools

from structures to text codes | validation and error checking | export for downstream analysis

Session 4

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Mini Capstone: SNFG Diagrams and Annotation Practice

Principles of SNFG symbolic representation

Theory plus Practical

Drawing and annotating glycans from examples

convert IUPAC to SNFG **marking linkages and branches** **simple case studies**

Deliverables: annotated structures and cheat sheet

PDF or HTML gallery **notation quick reference** **practice dataset**