

Clinical RNA-Seq — Fusion Calling & Expression Signatures — Hands-on

Learn how to use RNA-Seq in clinical workflows for oncology and rare disease. This module walks through clinical RNA-Seq design, QC, alignment and quantification, and then focuses on fusion calling, splice events and expression signatures that feed into reports, tumor boards and precision medicine discussions.

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Session Index

[Session 1 — Clinical RNA-Seq Use Cases & Study Designs](#) [Session 2 — Alignment, Quantification & Expression QC](#) [Session 3 — Fusion Calling, Splice Events & Signatures](#) [Session 4 — Mini Capstone: Fusion + Signature Case Snapshot](#)

Session 1

Fee: Rs 8800 [Apply Now](#)

Clinical RNA-Seq Use Cases & Study Designs

Where RNA-Seq fits in clinical genomics

[oncology fusions and signatures](#) [rare disease](#)
[transcript support](#) [expression based biomarkers](#)

Study designs and sample types for clinical RNA-Seq

[FFPE vs fresh tissue](#) [tumor purity constraints](#) [paired](#)
[DNA + RNA designs](#)

Library prep, strandedness and sequencing choices

polyA vs ribodepletion **stranded protocols** **read length and depth targets**

Session 2

Fee: Rs 11800 Apply Now

Alignment, Quantification & Expression QC

RNA-Seq alignment choices and reference models

splice aware aligners overview **genome vs transcriptome alignment** **reference annotation impact**

Expression quantification and normalisation basics

counts and TPM like measures **batch and technical effects** **per sample QC dashboards**

Clinical QC considerations for RNA-Seq data

read distribution and coverage **contamination and mix ups** **minimum thresholds for reporting**

Session 3

Fee: Rs 14800 Apply Now

Fusion Calling, Splice Events & Signatures

Fusion calling concepts and artefacts

split and spanning reads **read through and technical artefacts** **filtering and QC for fusions**

Splice junctions, isoforms and outlier expression

alternative splicing overview **transcript level changes** **outlier gene expression views**

Expression signatures and clinical markers

pre defined oncology signatures (high level) **gene**

sets and pathways snapshot **limitations and validation mindset**

Session 4

Fee: Rs 18800 Apply Now

Mini Capstone: Fusion + Signature Case Snapshot

Work through an anonymised RNA-Seq oncology style case

Theory + Practical

Prepare a fusion and expression summary table

validated fusions **key expression outliers** **supporting QC notes**

Draft a report friendly narrative for tumor boards

fusion description and relevance **signature interpretation caveats** **follow up assay suggestions**