
RNA-seq-workshop

Lecture 01

Introduction To:

RNA-Seq Primary Data Analysis Workshop

Computational Genomics Lab

<https://pcg-lab.iut.ac.ir>

Aboozar Soorni

**Departments of Biotechnology
Isfahan University of Technology**

Outline

- Introduction to RNA-Seq
- Library preparation
- Illumina-based sequencing
- Raw data
- Quality control (FastQC results)
- Reference genome - Alignment
- Assemble transcripts with StringTie
- Counting reads and quantifying gene expression
- Differential expression analysis
- Overrepresentation analysis (Gene Ontology - KEGG)
- Plotting with R

Upcoming Workshops

- Predicting the of Long Noncoding RNAs Using RNA-Seq data
- Network analysis with WGCNA
- Transcription factor binding site (TFBS) enrichment analysis
- Construction of multilayer hierarchical gene regulatory network