

## Training in Genomics

### Key Features:

- Development of skills for genomics based research
- Hands on Experience on latest techniques
- Job Orientation Learning

### Module I: Introduction to the techniques of Genomics Study

- Extraction of DNA from various biological Samples
- Purification of DNA from various biological Samples
- Extraction of RNA from various biological Samples
- Extraction of Mitochondrial DNA
- Extraction of m RNA
- Amplification of DNA / RNA Samples

### Module I: Introduction to Electrophoresis Techniques

- Agarose Gel Electrophoresis
- SDS- PAGE
- Western Blotting
- Silver Staining
- 2D Gel Electrophoresis

### Module I: Introduction to PCR Techniques

- Method Development for PCR
- Reverse Transcriptase PCR
- Amplification of RNA
- Clinical Application of PCR
- Forensic application of PCR
- Purification of PCR Products
- Amplification of c DNA

### Module II: Genetic Engineering

- Extraction of Plasmid DNA
- Electrophoresis Of Plasmid DNA
- DNA Isolation ( Gene )

- DNA Elution from Gel
- Preparation of Vector DNA and Insert DNA
- Restriction Digestion
- Ligation of Genes
- Competent Cell Preparation
- Transformation
- Screening of Transformed Cell
- Amplification through PCR
- Extraction and Purification of Recombinant Protein
- SDS-PAGE of Recombinant Protein
- Western Blot

### **Module III: DNA Fingerprinting of through RAPD**

- Isolation of Genomic DNA
- Purification of Genomic DNA
- DNA Electrophoresis
- DNA Quantization
- DNA Dilution
- Primer Screening ( PCR )
- Electrophoresis of PCR Product
- DNA Scoring & Software Analysis
- Dendogram Generation / Construction of Phylogenetic Tree
- Similarity Matrix ( Diversity Metrix )

### **Module IV: Gene Expression Studies through Microarray**

- Extraction of m RNA
- Quantitative and Qualitative Analysis of RNA Sample ( RIN )
- Synthesis of c DNA
- Labeling of DNA
- Hybridization
- Application of Gene Chip Fluidics Station
- Scanning of Chip
- Microarray Data Analysis

### **Module V: Project Work**

**Duration:** 3 Months from date of joining

**Eligibility:** Masters or Bachelors from Life Science / Pharma (Studying or Passed out)

**Service Charge:** Rs 20,000/-