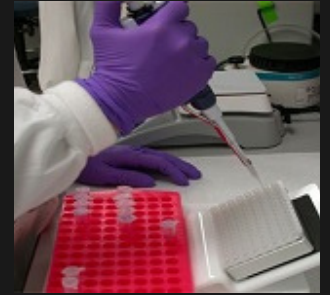# TRAINING IN MOLECULAR GENETICS

Ist Week - Lab Safety & Nucleic Acids

Day 1: Lab safety and Procedures ,Chemical & Reagent Preparation
Day 2: DNA Extraction & Optimization of Protocol
Day 3: Quantitative & Qualitative Analysis of DNA
Day 4: Lab Safety for RNA, Total RNA Extraction & Optimization
Day 5: Quantitative & Qualitative Analysis of RNA

IInd Week - Bioinformatics, cDNA Synthesis & PCR Run

Day 1: Bioinformatics: Primer Designing, Vectors, Selection of Restriction Sites, Virtual PCR, other Bioinformatics tools & Techniques
Day 2: mRNA Purification & First Strand cDNA Synthesis
Day 3: Optimisation of PCR Reaction – Melting Point , GC Content , Concentrations and Cycles, Sample Preparation For PCR Analysis, PCR sample Run
Day 4: Analysis of PCR sample
Day 5: Qualitative RT- PCR sample run & Analysis
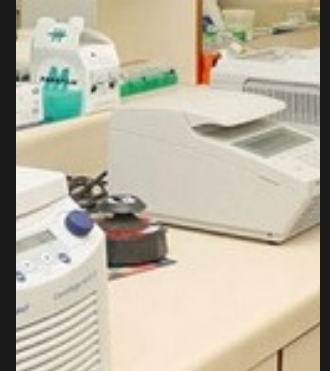
IIIrd Week - Real Time PCR Analysis

Day 1 : RNA Extraction, Quantitative & Qualitative Analysis of RNA
Day 2: mRNA Purification & First Strand cDNA Synthesis
Day 3: Real Time PCR - Reaction setup for real time PCR, selection of quantification – relative or absolute
Day 4: SYBR Green Assay and Sample run
Day 5: Real Time PCR Data Analysis
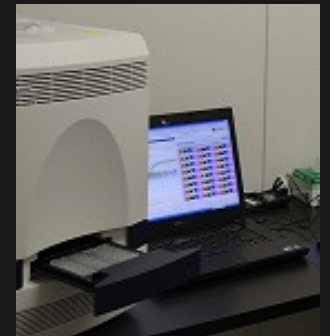
IVth Week - rDNA Technology

Day 1: Isolation of pUC18 plasmid from TOP10-pUC18 E coli cells
Day 2: Restriction digestion of pUC 18 and λ DNA & Purifying pUC18/Hind III/ EcoR I digest by gel elution
Day 3: Ligating the linearized plasmid -pUC18 and the insert –λDNA
Day 4: Preparation of competent cells
Day 5: Transformation of TOP10 cells with the pUC18-λDNA ligated Product & Confirmation by PCR
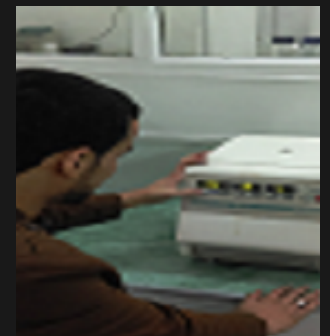
Vth Week - Project Work

We will share our ideas and decide for small piece of research in limited time frame.

Cost of Training : Training Only -INR 10,000 / -
Training + Project - INR 12,000/-

Duration : 80 to 100 Hrs or 4 to 6 Weeks

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