Molecular Biology (7 days)

Module Content
Preparation of Molecular-grade solutions
Demonstration of isolation of genomic DNA from prokaryotes
Agarose gel electrophoresis
Quantification of DNA sample
PCR

Molecular biology (15 days)

Module Content
Preparation of Molecular-grade solutions
Demonstration of isolation of genomic DNA from prokaryotes
Demonstration of isolation of genomic DNA from eukaryotes
Demonstration of plasmid DNA from prokaryotes
Agarose gel electrophoresis
Quantification of DNA sample
Determination of melting temperature (Tm) of prokaryotic DNA
Restriction Digestion
PCR
RAPD

Molecular biology (30 days)

Module Content
Preparation of Molecular-grade solutions
Demonstration of isolation of genomic DNA from prokaryotes
Demonstration of isolation of genomic DNA from Eukaryotes (plant cells)
Isolation of plasmid DNA from prokaryotes
Agarose gel electrophoresis and quantification of DNA sample
Calculation of DNA melting temperature and estimation of composition of nucleotide sample
PCR amplification – gene-specific
PCR amplification – using RAPD Primers
PCR Purification
Competent cell preparation and transformation
Ligation
RFLP
SNP detection
SDS-PAGE