

BIOTECHNOLOGY Professional Training Program

ATG10 Applied Molecular Biology



Course coordinator – DEVENDRA LINGOJWAR, Director, ATG LAB

Theory u need to study for training, we will cover some of them as ppt presentation (whenever needed): with Basic wet lab biotech overview, Complete theory on each and every aspect of topic covered in wet lab. Theory of PCR, electrophoresis, STR and genotyping, SNP primer designing, RNA handling and isolation precautions, cDNA preparation, pre RT and RT steps in RT PCR, pre and post PCR purifications, DNA sequencing, Data handling of actual DNA sequences carried out at ATG as a part of in-house projects, basic bioinformatics applications for biotechnologists, basic rDNA technology theory, rDNA technology and its application in viral vaccine research.

Laboratory protocols in Applied Biotechnology training program:

1. Basic wet lab biotech overview: Autoclaving, sterilization, distillation, micropipetting

2. Biotech Individual handling of all imported Equipments and Instruments: Biorad Thermalcycler Gradient, Biorad Gel documentation system with quantity one software, Biorad Universal powerpack, Biorad Subcell GT submarine electrophoresis for DNA, Biorad Tetracell Vertical electrophoresis for Protein

3. Exploring DNA & RNA: Nucleic acid extraction techniques: a. DNA extraction from bacteria / cells / serum / plasma; b. RNA: RNA extraction from bacteria / cells / plasma / serum

4. Polymerase Chain Reaction and DNA electrophoresis: a. Standard general student's PCR, b. Nested PCR for viral diagnosis by diagnostic primers set, c. Gradient PCR: Standardization of new PCR, d. Applied PCR for bacterial detection from conserved region primers

5. Reverse Transcriptase Polymerase Chain Reactions: a. Reverse Transcriptase (RT-PCR) for specific Human cell lines with DNA electrophoresis

6. Bacterial Transformation: a. Revival of bacterial cultures b. Competent cell preparation; c. transformation, d. identification of transformants

7. Protein Studies: a. Collection of Sample, Processing and storage of samples, Protein isolation, Protein purification, Hemoglobin separation by cellulose acetate membrane electrophoresis and identification of protein pattern, comparative studies with clinical profile, b. Standard SDS PAGE

8. Applied Bioinformatics: a. Reading DNA sequence from ABI 310 / 3100 Genetic analyzer, b. Correction of sequence data for data selection for BLAST, data interpretation, c. Primer designing: bioinformatics Software and tools for designing primers, D. BLAST and phylogeny

9. Assessment after training: Lectures by trainee, calculation demonstration to new fresh trainees, Group discussion, Powerpoint presentation, CV preparation for particular interviews etc.

Duration: 60 days

For joining ATG Training programs, register in advance. BY SENDING FOLLOWING DOCUMENTS

1. Completely filled registration form with colored photograph
2. DD of Rs. 500/- in favor of "DEVENDRA LINGOJWAR" payable at Pune,
3. Letter from college / institute authority in case if you are student, or from Director if you are employee,
4. CV with address and contact number, 5. One recent stamp size photograph, 6. Address proof from college/ institution's authority

Contact

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