ProCyto Labs Pvt. Ltd.
Be Curious. Be Genuine

Training Module (60 days)

Title: Comprehensive Laboratory Training Program: Building Skills in Microbiology and Molecular Biology Techniques

Phase 1 | Lab exposure

- Understanding and adhering to Good Lab Practices
- Learning and understanding basic lab etiquettes
    - Lab hygiene maintenance
    - Maintenance of lab consumables
    - Cleaning and sterilization of plastic and glass wares
- Learning basic lab modules
    - Instruments (Laminar air flow, autoclave, weighing balance, laboratory microwave, Conventional PCR machine, centrifuge, pH meter, dry bath, gel documentation system, gel electrophoresis system, PAGE system, UV Transilluminator, magnetic stirrer, shaker incubator)
    - Micro pipetting
    - Media preparation

Phase 2 | Microbiology

- Learning and understanding of Microbiology and its significance
- Basic microbiology techniques
    - Aseptic techniques: This includes proper handwashing, working within a laminar flow hood, and using sterile equipment.
    - Sterilization Method: autoclaving
    - Media Preparation: Preparation of culture media, including agar plates and broth
    - Streak plate method
    - Quantification of bacteria: serial dilution and plating, for counting and estimating bacterial populations
- Glycerol stock preparation
- Colony Counting
    - Technique for counting bacterial colonies on agar plates
    - Applications and significance in microbiological studies
- MIC (Minimum Inhibitory Concentration)
    - Introduction to MIC and its importance in microbiology
    - Step-by-step protocol for performing MIC experiments
    - Interpretation of results to determine the effectiveness of antimicrobial agents

Phase 3 | Molecular Biology

- Plasmid and genomic DNA extraction/isolation from microbial cells using manual and commercial DNA Isolation procedures
- Conventional PCR technique
- Agarose gel electrophoresis
- PCR purification
- DNA purification from agarose gel
- Restriction enzyme digestion
- RNA Isolation from bacteria
- Genomic DNA Isolation from human blood