

## Biotechnology Course Finishers Training Program

This capstone-like program consolidates all learned biotechnology skills and knowledge, offering intensive practice and review sessions to ensure mastery of the field before final evaluations.

**Note: Below modules are designed keeping high end industrial professionals into consideration. Please refer individual protocols below for affordable prices.**

### Molecular Biology Techniques

**Kindly review the fees outlined for the individual protocols listed in this module.**

- Gateway Cloning
- TOPO Cloning
- Bacterial Artificial Chromosome (BAC) Cloning
- Yeast Two-Hybrid Screening
- Recombineering
- Directed Evolution
- Phage Display
- Protein Labeling with Fluorescent Tags
- Site-Directed Mutagenesis
- Protein-Protein Interaction Mapping via Cross-Linking Mass Spectrometry
- RNA-Seq
- Northern Blotting
- MicroRNA Analysis using qPCR
- Ribosome Profiling
- RNA Immunoprecipitation
- ChIP-Seq
- ATAC-Seq
- DNA Methylation Analysis using Bisulfite Sequencing
- Histone Modification Studies via Mass Spectrometry
- Chromosome Conformation Capture (3C)
- Confocal Microscopy
- Fluorescence in situ Hybridization (FISH)
- High-Content Screening
- Live Cell Imaging
- Super-Resolution Microscopy
- Luciferase Reporter Assays
- Fluorescence Resonance Energy Transfer (FRET)

- Bimolecular Fluorescence Complementation (BiFC)
- Fluorescent Protein Engineering
- Quantitative Fluorescent Assays

## **Bioprocessing Techniques**

**Kindly review the fees outlined for the individual protocols listed in this module.**

- Sterile Filtration
- Fed-Batch Fermentation
- Continuous Culture Systems
- Cell Harvesting by Centrifugation
- Protein Purification via Chromatography
- Tangential Flow Filtration
- Lyophilization for Product Stabilization
- Bioreactor Operation and Control
- Downstream Processing Optimization
- Enzyme Immobilization Techniques
- Cell Line Development for Production
- Quality Control in Bioprocessing
- Process Analytical Technology (PAT) Implementation
- Upstream Processing Optimization
- Scale-Up and Scale-Down Models
- Aseptic Processing and Validation
- High-Gravity Fermentation
- Bioproduct Recovery Techniques
- Use of Disposable Bioreactor Systems
- Application of CRISPR in Cell Line Engineering
- Metabolic Flux Analysis
- Real-Time Bioprocess Monitoring
- Cell Culture Media Formulation
- Optical Density Measurements for Growth Monitoring
- Dynamic Process Simulation

## **Genetic Engineering Practices**

**Kindly review the fees outlined for the individual protocols listed in this module.**

- Agrobacterium-mediated Transformation
- Electroporation of Cells
- CRISPR-Cas9 Gene Editing

- TALENs for Targeted Gene Editing
- Zinc Finger Nucleases (ZFNs)
- Homologous Recombination
- Viral Vector-Mediated Gene Transfer
- Transgenic Animal Production
- Gene Silencing Using RNA Interference (RNAi)
- Gene Knockout via CRISPR
- Site-Directed Mutagenesis
- Synthetic Biology Constructs
- Gene Drives for Population Control
- Gibson Assembly of DNA Fragments
- Use of Reporter Genes for Gene Expression Studies
- Single-Cell Genomics
- Multiplex Genome Engineering
- Epigenetic Editing
- Gene Therapy for Genetic Disorders
- Custom Antibody Production
- Genome-Scale CRISPR Screens
- Bioinformatics for Gene Annotation
- Use of Guide RNA Libraries for CRISPR Screening
- Protein Engineering for Altered Functionality
- Development of Biosynthetic Pathways

## **Biotechnology Applications**

**Kindly review the fees outlined for the individual protocols listed in this module.**

- Genetically Modified Crops for Enhanced Yield and Resistance
- Biofuels Production through Microbial Fermentation
- Bioremediation of Contaminated Sites Using Engineered Organisms
- Tissue Engineering for Regenerative Medicine
- Gene Therapy for Hereditary Diseases
- Development of Diagnostic Biosensors
- Enzyme Engineering for Industrial Applications
- Personalized Medicine Based on Genetic Profiling
- Production of Biodegradable Plastics
- CRISPR Technology for Genome Editing
- Antibody Production for Immunotherapy
- Stem Cell Therapy for Disease Treatment
- Vaccine Development Including mRNA Vaccines
- Synthetic Biology for Novel Organisms
- Pharmaceutical Production Using Cell Culture Systems
- Aquaculture Improvements with Genetic Engineering
- Microbial Mining for Bioleaching of Metals

- Nutraceutical Production for Health Enhancement
- Industrial Biocatalysis for Cleaner Manufacturing Processes
- Forensic DNA Analysis for Legal and Criminal Investigations
- Biological Control of Pests and Vectors
- Environmental Biosafety Monitoring
- Nano-biotechnology for Targeted Drug Delivery
- Cell-free Systems for Synthetic Pathway Assembly
- Agricultural Biotechnology for Soil and Plant Health

## Individual Protocols Under Biotechnology Course Finishers Training Program

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**Please contact on +91-8977624748 for more details**

Cant Come to Hyderabad? No Problem, You can do it in Virtual / Online Mode