

Biotechnology Online or Virtual Internship

Basic Sector:

1.

Techniques

Molecular Biology: RNA extraction, cDNA synthesis, Real-time PCR

Bioinformatics: Gene expression analysis tools, pathway analysis software

2.

Techniques

Molecular Biology: DNA sequencing, PCR, Gene cloning

Plant Tissue Culturing: Micropropagation techniques

Bioinformatics: Comparative genomics analysis

3.

Techniques

Molecular Biology: Gene editing (CRISPR/Cas9), Transformation techniques

Plant Tissue Culturing: Regeneration protocols for transformed plants

Bioinformatics: Functional genomics analysis, Protein structure prediction

Therapeutic Sector:

4.

Techniques

Molecular Biology: Identification of medicinal genes, Gene expression analysis

Plant Tissue Culturing: Cell suspension culture, Secondary metabolite production

Bioinformatics: Pathway analysis, Molecular modeling

5.

Techniques

Molecular Biology: Antigen gene insertion, Protein expression analysis

Plant Tissue Culturing: Organogenesis, Suspension culture techniques
Bioinformatics: Epitope prediction, Vaccine design software

Industrial Sector:

6.

Techniques

Molecular Biology: Algal DNA extraction, Genetic modification for enhanced lipid production
Bioinformatics: Metabolic pathway analysis, Comparative genomics of algae species

7.

Techniques

Plant Tissue Culturing: Micropropagation, Somatic embryogenesis
Molecular Biology: Genetic markers for quality control, Authentication of plant species
Bioinformatics: DNA barcoding, Phylogenetic analysis

8.

Techniques

Molecular Biology: Gene cloning for pollutant degradation enzymes, Plant transformation techniques
Plant Tissue Culturing: Callus culture, Root transformation methods
Bioinformatics: Protein structure prediction, Environmental genomics analysis

9.

Techniques

Molecular Biology: Genetic modification for nutrient enhancement, Nutrient analysis
Plant Tissue Culturing: Meristem culture for disease-free plants, Nutrient medium optimization
Bioinformatics: Comparative genomics, Nutritional pathway analysis

10.

Techniques

- Molecular Biology: Gene expression analysis of pollutant-degrading genes, PCR-based detection of microbial communities
- Plant Tissue Culturing: Co-culture systems, Root exudate analysis
- Bioinformatics: Metagenomic analysis, Functional gene annotations