Research Facility and Expertise Available

The Department of Biotechnology works several research laboratories providing to the following core research areas.

**Bioinformatics Lab**

Bioinformatics is a fast emerging multidisciplinary area. There has been a huge increase in the data over the previous period. Our research activities include computational modeling of biological processes, database development and data-mining, statistical and mathematical analyses.

*Instrumentation Available*

Server

Desktops

**Plant Tissue culture Lab**

The practice of maintaining or expanding plant cells, tissues, or organs on a nutrient culture medium under sterile circumstances is known as plant tissue culture. Micropropagation, a process for creating plant clones, is frequently utilized. Various plant tissue culture techniques may have certain advantages over conventional methods of propagation, such as:

To develop mature plants quickly.

To grow a lot of plants in a small amount of area.

*Instrumentation Available*

Muffle furance

Lyophilization Machine

UV- Transillumintor

Incubator shaker

Spectrophotometer

Plant growth Chamber

Laminar Air Flow

**Microbial Fermentation Technology Lab**

Microbial fermentation is a biochemical process that manages to extract chemical energy from carbohydrates without the oxygen. This chemical reaction occurs in bacteria, yeasts or even in muscles of humans. During fermentation microorganisms produce enzymes to break down complex compounds to simple bio-molecules for several biological activities such as proteinase, amylase, mannase, cellulase, and catalase.

*Instrumentation Available*

High speed centrifuge

Laminar Air Flow

Autoclave

-20 0C Freezer

Rotavapour

UV visible spectrophotometer

Visible spectrophotometer

Incubator shaker

**Medical Plant Biotechnology Lab**

This unique overview of plants and transgenic methods covers the entire gamut from cell culture methods, through genetic engineering, secondary product metabolism, and up to the use of transgenic plants for the production of bioactive compounds. It is of great scientific, medicinal, and economic value to both industry and academia. All throughout, applicable examples are provided, such as the creation of cancer medicines, useful foods, and flavor components in plants.

*Instrumentation Available*

Centrifuge

Lyophilization Machine

UV- Transillumintor

Plant Tissue Culture Cabinet

Laminar Air Flow

-70 0C Freezer

**Recombinant DNA Technology Lab**

Enzymes and a variety of laboratory procedures are used in recombinant DNA technology to modify and isolate specific DNA sequences. Using this technique, one can join (or splice) DNA from several species or produce genes with novel functions. Recombinant DNA is the name given to the resultant copies. The recombinant DNA is normally propagated in a bacterial or yeast cell, whose biological machinery copies both the naturally occurring DNA and the designed DNA.

*Instrumentation Available*

Centrifuge

UV- Transillumintor

PCR

Ligation Bath

Gel documentation system

Ice flaking machine

Laminar Air Flow

Spectrophotometer

**Biochemistry Lab**

Numerous branches of cell biology and molecular biology are included in biochemistry. It is pertinent to the molecular anatomy, which is the study of the molecules that make up the framework of organs and cells. It depicts the reactions that carbon molecules go through in living things. Additionally, it discusses molecular physiology, which is how molecules carry out the needs of cells and organs. It primarily focuses on the investigation of the composition and purposes of biomolecules such lipids, proteins, carbohydrates, and acids.

*Instrumentation Available*

UV- Visible spectrophotometer

Centrifuge

HPLC

Incubator shaker

Incubator

Laminar Air Flow

Spectrophotometer

**Industrial Biotechnology Lab**

One of the most innovative and promising methods for cost-cutting, resource conservation, and pollution control is industrial biotechnology. It's frequently referred to as the third biotechnology wave. Industrial biotechnology may have a greater global influence than medical and agricultural biotechnology if it is fully developed. It gives companies a means to cut costs, open up new markets, and preserve the environment.

*Instrumentation Available*

Light Microscope

Laminar Air Flow

Autoclave

-20 0C Freezer

Rotavapour

Visible spectrophotometer

Incubator shaker

Autoclave