



**Carbohydrate Enzyme
Biotechnology Laboratory**
**SCIENTIFIC INSTRUMENTS
AND GROUP MEMBERS**

Department of Biosciences and Bioengineering,
Indian Institute of Technology Guwahati

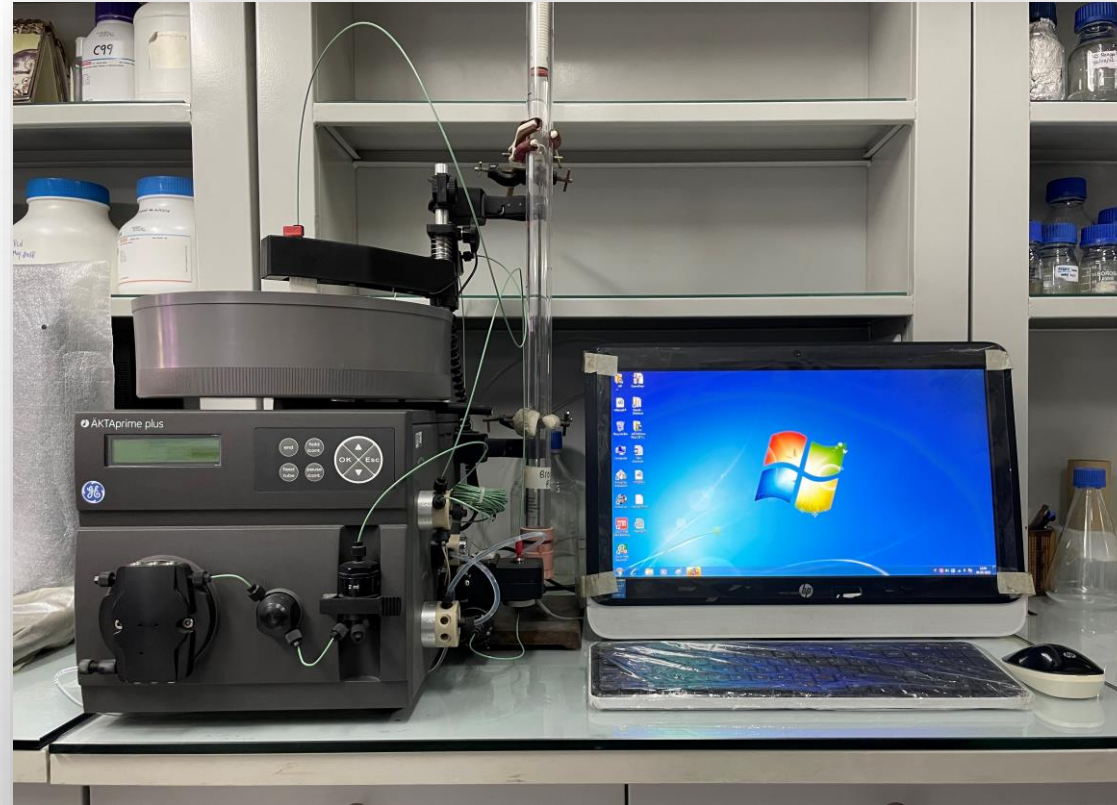


Protein crystallization Robot



OryxNano, a Protein crystallization Robot for sitting drop method with simple optimization. It is used for large-scale screening of crystallization conditions for proteins.

Fast Protein Liquid Chromatography (FPLC)



AKTA prime plus chromatography system is a lab-scale protein purification system for purification of biomolecules, providing speed and flexibility in research process.

Isothermal Titration Calorimetry (ITC)



Isothermal Titration Calorimeter (Malvern, MicroCal iTC200) is used to study a wide range of biomolecular interactions. The applications range from drug design to fundamental research. These systems deliver direct, label free and in-solution measurements of binding affinity and thermodynamic parameters.

Infra-Red Spectroscopy (FTIR)



Fourier-Transform Infrared Spectroscopy (FTIR, Perkin Elmer) is used to obtain infrared spectrum of a solid, liquid or gas. When IR radiation is passed through a sample, some radiation is absorbed by the sample and some passes through (is transmitted). The resulting signal at detector is a spectrum representing a molecular 'fingerprint' of sample.

UV-Visible Spectrophotometer



UV-Visible Spectrophotometer (Thermo scientific, Multiskan Skyhigh).

A UV/Vis microplate spectrophotometer for DNA, RNA, and protein analysis, as well as turbidity measurements. Also capable of cuvette and nanodrop reading.

PROTEIN CRYSTAL INCUBATOR



Vibration-free incubator (Memmert) for protein crystallization.

CENTRIFUGE



Refrigerated Centrifuge (Thermo, Sorvall XTR)



Centrifuge (Heraeus Pico 17)

DEEP FREEZERS



Ultra Deep (-80°C) and Deep (-20°C) freezers

HOT WATER BATH



Hot water bath



Twin Hot water bath

AUTOCLAVE



Autoclave system for sterilization.

ORBITAL SHAKER INCUBATOR



Orbital shaker incubator for culturing microbes and general mixing.

HOT AIR OVEN



Hot air oven for drying glasswares, plastic wares and other research purposes.

WEIGHING BALANCE



High precision Weighing Balance (Scale-Tec).