

**MOLECULAR BIOPHYSICS UNIT
INDIAN INSTITUTE OF SCIENCE
BANGALORE**

DST – Fund for Improvement in S&T Infrastructure

Brief Outline of the Department

Molecular Biophysics Unit was founded by Prof. G.N. Ramachandran in the year 1971. Presently it has 8 Professors, 2 Associate Professors, 1 Assistant Professor, 1 Technical Officer Gr. III and 10 supporting staff. It has 60 Ph.D. Students including 11 Integrated Ph.D. students, 40 Postdoctoral fellows and 35 Project Assistants. It has 3 INSA Senior Scientists and 1 Distinguished Biotechnologist / Honorary Professor (IISc). All the equipment procured by the Department is available for use to all members of the Department as well as for Scientists from other Academic Institutions.

Teaching & Research Activities

The teaching activity of the Unit is mainly geared towards supporting the background necessary for carrying out research in molecular biophysics to doctoral students of the Unit. The students get extensively trained in spectroscopic methods, X-ray techniques and biochemical methods for the characterization of biomolecules.

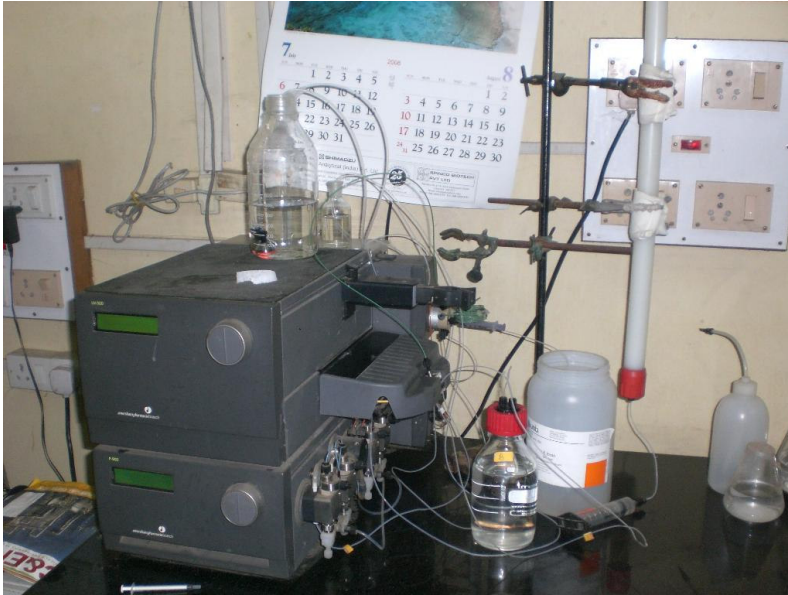
The main thrust of the Unit is concerned with research on the structure, conformation and interactions of biomolecules. The main objective is to understand biological activity in terms of molecular properties. The strategy is to employ several modern synthetic, biochemical, spectroscopic, X-ray crystallographic and computational methods for the realization of the objectives.

Facilities Created



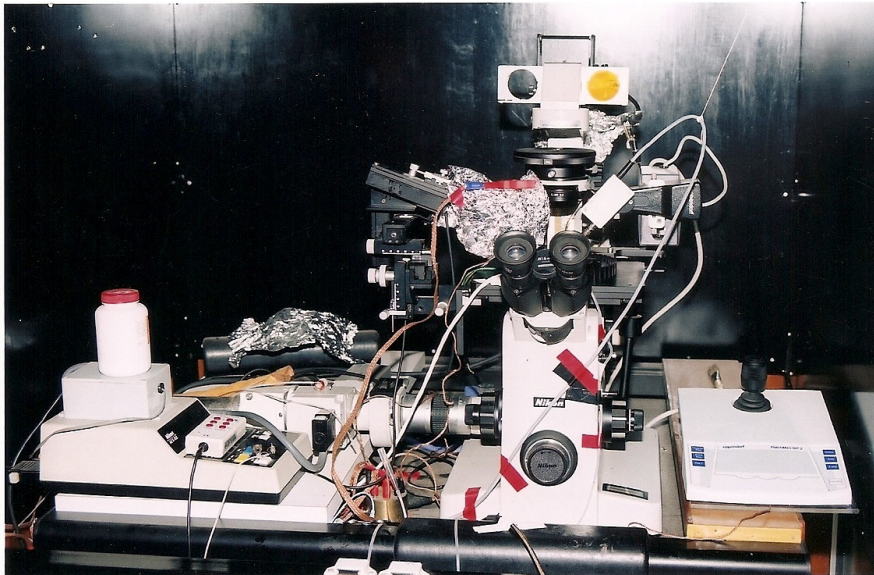
Sorvall Evolution RC Refrigerated Super Speed Centrifuge:

The procured refrigerated centrifuge is one of the most essential and heavily used instruments of the Department.



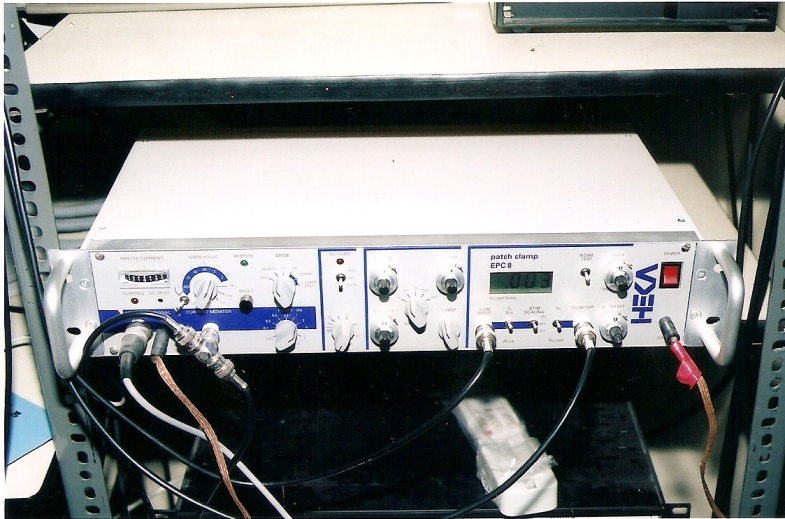
Fast Protein Liquid Chromatography System:

The chromatography system has been used in the purification and characterization of proteins.



Patchman NP2 Micromanipulator:

The Patchman NP2 micromanipulator has been an integral component of the patch clamp set up of the Department.



Patch Clamp Amplifier: This equipment allows measurement of electrical activity from neurons and other cells.



-80° C Freezer :

This equipment has been used to store valuable and perishable biochemical reagents and enzymes.



Dyno Pro MS 800 dynamic Light Scattering:

This instrument has been extensively used to estimate the size of proteins and to examine the potential of a protein preparation for crystallization and further structural studies by X-ray diffraction.



TAU fully automated fluorescence life time measurement system:

This instrument has been used for monitoring conformational transitions and protein folding.



Optima L-90K CE Ultracentrifuge:

The ultracentrifuge has been extensively used for structural studies on viruses.

For further details contact:

Prof. M.R.N. Murthy
Chairman
Molecular Biophysics Unit,
Indian Institute of Science,
Bangalore – 560 012, Karnataka,
Tel: 080-22932460
Fax: 080-23600535
Email: mrn@mbu.iisc.ernet.in