

One Year Post MD/MS Course in Biotechnology
APPLICATIONS IN MEDICINE: GENETIC COUNSELLING AND
PRENATAL DIAGNOSIS

Recent advances in the field of genetics have lead to the vast developments in the field of molecular medicine. These technological advances have found applications in the field of diagnostics and development of new treatments. This has totally revolutionalized medicine and patient care. The research in molecular genetics has made the most dramatic impact on the Mendelian disorders. The clinically most relevant applications of molecular technologies are **DNA based diagnosis, genetic counseling and prenatal diagnosis**. The medical fraternity needs to have the knowledge in this field to be competent to provide medical care in 21st century.

One year post MD/MS Course in Biotechnology is an opportunity to learn new advances in the field of biotechnology in medicine and their applications in clinical practice like genetic counseling and prenatal diagnosis.

Eligibility: Postgraduate degree in any medical specialty.

Duration: One year

Displacement allowance of Rs 6000/- per month will be given.

Selection: by interview

How to apply:

Send your application [by 31st May , 2008] along with biodata to

Prof Suraksha Agrawal

Head of the Department

Department of Medical Genetics

Sanjay Gandhi Postgraduate Institute of Medical Sciences

RaiBareilly Road, Lucknow , 226014, Uttar Pradesh

Hands on training will be provided in the following fields. The areas of training will depend on the background (subjects of postgraduate degree) of the trainees.

I. Laboratory training

1. Clinical Cytogenetics: Techniques to study chromosomes, Interpretation of normal and abnormal reports. Use of new techniques based on fluorescence in situ hybridization (FISH). Use of karyotyping and FISH based techniques for prenatal diagnosis.

2. Molecular genetics:

- Molecular techniques like PCR, RFLP, sequencing.
- Use of these techniques for DNA diagnosis of monogenic disorders, research and paternity testing.
- Use of molecular techniques for patient diagnosis, prenatal diagnosis and carrier detection.
- Screening for known and unknown mutations.
- Use of linkage analysis for carrier detection and prenatal diagnosis.
- Gene Expression studies

3. HLA Typing :

- Molecular based HLA typing (SSP, SSOP and sequencing)
- Cross Match
- Chimerism analysis
- Panel reactive antibodies (By ELISA)
- Anti paternal Leukocyte antibodies

II. Clinical:

- Application of DNA based techniques in patient care.
- Chromosomal analysis and counseling for chromosomal anomalies.

- Malformations in fetuses and in children-Diagnosis, counseling and prenatal diagnosis.
- Diagnosis, counseling and management of genetic disorder.

III. Theory:

- Basic genetics
- Cytogenetics
- Molecular genetics
- Biochemical genetics
- Population genetics
- Immunogenetics
- Recent advances