

**Department of Molecular Reproduction,
Development and Genetics
Indian Institute of Science, Bangalore**

DST-Fund for Improvement in S&T Infrastructure

Brief Outline of Department

The activities of this Department are directed towards generating an integrated research programme in reproductive biology, developmental biology and genetics. Our current interests in these areas include the cloning, expression and structure-function relationships of glycoprotein hormones and their receptors; implantation in rodents and primates; the role of MAP kinases during ovarian follicular growth and apoptosis; the regulation of corpus luteum function in primates; the roles of receptor guanylyl cyclases and cyclic nucleotide phosphodiesterases and tyrosine kinases; the influences of cellular calcium and cell cycle phase in determining the pattern of gene expression in the social amoeba *Dictyostelium*; the role of growth factors in regulating gene expression and differentiation; the reasons behind the existence of cryptic genes and the mapping, isolation and mutational analysis of genes causing different mendelian genetic disorders.

Teaching & Research Activities

The courses taught by the department include Developmental Biology, Endocrinology, Signal Transduction and Human Genetics. As described above, our research activities broadly cover the areas indicated by these courses. The research techniques used by us are those of cell and molecular biology, Biochemistry as well as more contemporary ones such as genomics.

Facilities Created

1. Micro array scanner: Amersham life sciences Typhoon 9100 is a multipurpose imager which is capable of scanning micro array slides, phosphorimaging and Chemiluminescence measurements. The scanning area can accommodate micro slides (3 cm x 5 cm) to gels of 35x43 cms.
2. Real time PCR machine: Applied biosystems ABI Prism 7000 system is a PCR machine based on 96 well format capable of monitoring the amplification of nucleic acids in real time using a fluorescent probe incorporated into the reactions. The instrument can measure upto 4 color fluorescent emissions for multiplex applications.

3. High Speed Centrifuge: Beckman high speed centrifuge for biochemistry and cell biology related equipments

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