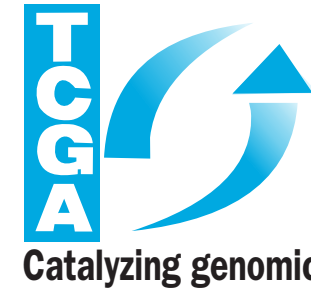


# Catalyzing Genomics



THE CENTRE FOR GENOMIC APPLICATION



## Strategic Advantages

- Liberating scientists from mundane, day-to-day activities of managing the research facility.
- The facility is operated on a commercial basis and made available to all against "fee for service" basis.
- Cost effective due to economies of scale and professional management leading to better utilization.
- Quality standards easily maintained and controlled throughout project phase.
- Future investments of Government towards meeting Capital expenditure to National Laboratories, Universities, individual R&D can be minimized by replacing it with Operational expenditure.
- Human Resource generation by training people in cutting edge technology for scientific research.

[www.tcgaresearch.org](http://www.tcgaresearch.org)

An IGIB-IMM Joint Initiative



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The Centre for Genomic Application (TCGA) was conceived in the year 2003 as a core-shared facility. The Centre was established through the collaborative efforts of the Institute of Genomics and Integrative Biology (IGIB), a Council of Scientific and Industrial Research (CSIR) organisation and the Institute of Molecular Medicine (IMM- The Chatterjee Group).

TCGA provides research facilities, infrastructure and work ambience of international quality to support R&D institutions, universities and industry to carry out cutting edge research and to make new discoveries. As India's first ever public-private partnership initiative in the genomics and proteomics domain, we enable pharmaceutical and biotechnology companies to enhance their overall drug development programs by partnering with them in projects from design to data analysis as well as offering them highly flexible service packages. In future, TCGA plans to render incubation laboratories for start up entrepreneurs and scientists of national and international fame to implement their vision.



### Next-Gen Sequencing and Analysis

End-to-end services including assay design, data generation and bioinformatics on a wide range of applications:

Whole Genome Sequencing  
 RNA-seq,  
 Chip-seq,  
 Small RNA-seq,  
 Epigenome seq,  
 Reference Assembly,  
 Denovo Assembly of genomes,  
 Structural Variations,  
 Copy Number Changes,  
 Insertion Deletion (InDel) mapping,  
 Metagenomics,  
 Comprehensive genome annotation solutions

Re-sequencing for mutation and/or SNP discovery  
 High Throughput PCR, Plasmid Purification  
 Plasmid, BAC, Cosmid, Phagemid and PCR Product Sequencing  
 High throughput Cloning  
 High throughput multiplex mutation scans

- Roche 454 technologies
- Illumina Genome Analyzer IIx
- 3730 ABI Genetic Analyzer
- Hydra, Biomek and Multimek Robotic Workstation
- 288 node HP XC Cluster for Bioinformatics

### Genotyping

Genome Wide Association (GWA)  
 Affymetrix High density GeneChip  
 Illumina iScan system  
 Infinium whole genome scans  
 Targeted genotyping using Goldengate assay  
 Mass Array Sequenom  
 End to end services-assay design, development and data analysis  
 Recommended for Validation and Fine Mapping studies

- Affymetrix Gene Chip system
- Illumina iScan with automation
- Massarray Sequenom

### Microarray

Gene Expression profiling by Illumina Bead Array or Affymetrix GeneChip Platform  
 MicroRNA Expression Profiling by Microarray or RT-PCR Arrays  
 mRNA quantification by RT-PCR  
 RNA Quality check by Bioanalyzer 2100  
 Advanced analysis of Microarray data

- Illumina BeadArray System
- Affymetrix Gene Chip System
- Roche Lightcycler 480 RT-PCR system
- Agilent Bioanalyzer 2100

### Proteomics

1D/2D gel electrophoresis/tryptic digestion of proteins in-gel & in-solution  
 Peptide Mass Fingerprinting (PMF) and sequencing of proteins using MALDI TOF/TOF  
 Identification and sequencing of proteins by LC-MS/MS  
 Shotgun proteomics or MUDPIT analysis using 2D nano LC-MS  
 Intact protein and peptide mass determination for protein identification

- Biorad 2D Gel Electrophoresis Unit
- Bruker Ultraflex MALDI-TOF/TOF mass spectrometer
- Agilent 1100 series 2D Nano LCMS
- Thermo LCQ Deca Nano LCMS
- Versadoc imaging system, Biorad

### Oligonucleotide Synthesis

Custom Oligos  
 Degenerate Oligos  
 Fluorescent Labelled Oligos

- MerMade-192 DNA/RNA Synthesiser
- ABI 3900 DNA Synthesizer