



MOLECULAR RESOURCE CENTER OF EXCELLENCE (MRC)

The MRC Core provides molecular technologies for exploring basic biological mechanisms and the molecular basis of human disease. The MRC is a Tennessee Higher Education Commission (THEC) Center of Excellence serving the UTHSC campuses.

The MRC invests in both state-of-the-art equipment and trained personnel. It houses a full range of equipment that facilitates molecular, genetic, and biochemical studies at the sub-cellular and systems biology levels. In addition to providing technical services, MRC personnel assist and instruct investigators in applying specialized tools of modern molecular biology to basic and clinical research.

The MRC's services include sequencing at both the single fragment and whole genome/transcriptome (next-generation sequencing, NGS) levels. Equipment, reagents, and training for real-time PCR and automated isolation of nucleic acids are also provided.

SERVICES

- Nucleic Acid (DNA/RNA) Isolation (Qiagen QIAcube)
- Nucleic Acid Quality Analysis (Quantification and quality determination)
- Sanger Sequencing (Plasmids, fragments and PCR products) via Azenta
- Next-generation Sequencing (ChIP, targeted or whole genome or exome, and microbiome)
- Gene Expression Analysis (Affymetrix microarrays, total RNA and miRNA, ending February 2024)
- Gene Expression Analysis (RNA-Seq; single-cell-Seq)
- Gene Expression Analysis (qRT-PCR and digital PCR)
- Genotyping (Capillary Electrophoresis for STR and SNP analyses)
- Genotyping (qPCR and copy number analysis by digital PCR)
- Genotyping (Next-generation sequencing- targeted and exomes)
- Equipment for Client Use -Robotic Liquid Handler, Multimode Plate Reader, Fluorescence Microscope

EQUIPMENT AND SOFTWARE

- Qiacube Robot (Qiagen RNA/DNA isolation)
- Agilent Bioanalyzers (2)
- Nanodrop 1000 and 8000 Spectrophotometers
- Qubit fluorometer for DNA/RNA quantification
- Illumina NextSeq 2000
- Affymetrix GeneChip System
- Roche LightCycler 480 Systems (2)
- Formulatrix Mantis liquid handler
- Fluidigm Biomark
- Eppendorf epMotion 5075 Liquid Handling Robot
- Spectramax m2e multimode plate reader
- Zeiss Axiophot Microscope
- Hamilton STARlet robot for automated NGS library preparation

Please note: microarray services will be discontinued in February 2024

Samples to be sent to external vendors (Azenta or Transnetyx) must be received by 2:00pm Monday through Thursday.

STAFF



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