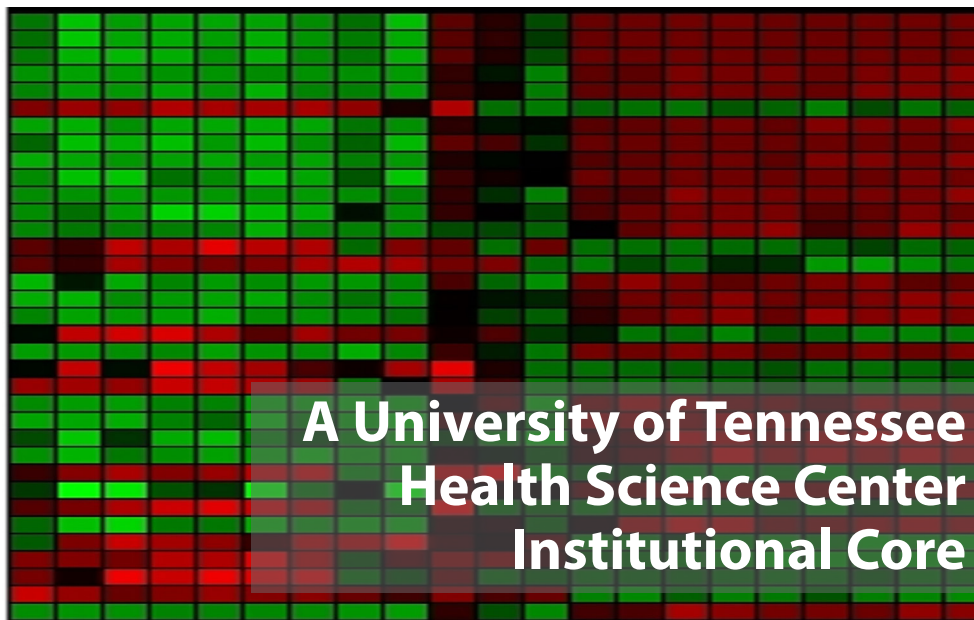


# Molecular Resource Center of Excellence (MRC)



## A University of Tennessee Health Science Center Institutional Core

The MRC Core's mission is to provide scientists with access to the latest molecular technologies for exploring basic biological mechanisms and the molecular basis of human disease.

### Introduction

The Molecular Resource Center (MRC) Core, established in 1985, is a Tennessee Higher Education Commission (THEC) Center of Excellence at the University of Tennessee Health Science Center (UTHSC). In order to accomplish its mission, the MRC invests in both state-of-the-art equipment and trained personnel. The MRC 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 along with offering Affymetrix and Illumina microarrays. 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 & PCR products)
- **Next-generation sequencing** (ChIP, targeted or whole genome or exome, & microbiome)
- **Gene Expression Analysis** (Affymetrix microarrays, total RNA and miRNA)
- **Gene Expression Analysis** (RNA-Seq)
- **Gene Expression Analysis** (qRT-PCR & digital PCR)
- **Genotyping** (Capillary Electrophoresis for STR & SNP analyses)
- **Genotyping** (Illumina Microarrays)
- **Genotyping** (qPCR & copy number analysis by digital PCR)
- **Genotyping** (Next-generation sequencing- targeted & exomes)
- **Methylation analysis** (Illumina microarrays & Sanger sequencing)
- **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 • Applied Biosystems 3130XL Sequencer • Ion Torrent PGM Sequencer • Ion Torrent Proton Sequencers (2) • Illumina NextSeq 500 • Affymetrix GeneChip System • Illumina iScan System • Roche LightCycler 480 Systems (2) • Fluidigm Biomark • Eppendorf epMotion 5075 Liquid Handling Robot • Spectramax m2e multimode plate reader • Zeiss Axiophot Microscope • Hamilton STARlet robot for automated NGS library preparation

## UTHSC Research Cores and Shared Resources

UTHSC Institutional Cores are dedicated to the success of your project. We serve the UTHSC research community by providing access to state-of-the-art equipment and to expert consultation services.  
<http://www.uthsc.edu/research/institutional-cores/index.php>

### CORE INFORMATION

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