

EILMC FACILITIES & RESOURCES

Laboratory:

The EILMC is located in Rms. 665a, 665b, and 665f in Whitehead Research Center and has 1125 square feet of dedicated wet lab space. The EILMC (<http://www.cores.emory.edu/eilc/about/index.html>) is equipped to perform quantitative lipidomics analyses on lipid samples from a wide variety of biological matrices (e.g. blood, serum, plasma, solid tissues, cell extracts, etc.) to support both clinical and basic research efforts on campus and in the broader research community. These analyses provide insights into lipids and lipid precursors whose abundance can be monitored as biomarkers to predict and follow progression of a wide range of diseases, such as metabolic disorders (e.g. obesity, type II diabetes, and NAFLD), neurodegenerative diseases (e.g. Alzheimer's Disease and Parkinson's Disease), and cancer (e.g. prostate and breast cancer). In addition to lipidomics assays, EILMC capabilities also include targeted and untargeted metabolomics as well as quantitative, plate-based metabolomics, Biocrates Quant500.

EIMLC Equipment: The EILMC lab houses a Sciex QTrap5500 enhanced high performance hybrid triple quadrupole/linear ion trap LC/MS/MS mass spectrometer with mass range of m/z 5 to 1250 in triple quadrupole mode, and 5-1000 in LIT mode. Highly sensitive targeted mass spectrometry work is conducted using an Agilent 6495c mass spectrometer with a mass range of m/z 5-3000, 25msec polarity switching, and 17000 Da/sec scan speeds. For high resolution mass spectrometry, the EIMLC utilizes a Thermo ID-X tribrid mass spectrometer that boasts resolution up to 500,000 FWHM and scan speeds up to 30Hz. Each mass spectrometer is paired with a complimenting HPLC/UHPLC - the ExionLC AC HPLC/UHPLC system, the 1290 Infinity II, and Vanquish UHPLC, respectively. Data analysis is done using a 44 core Xenon workstation with 196 GB of RAM for processing large datasets. Computer workstations with lipid processing software, such as LipidView (Sciex), MultiQuant (Sciex), MassHunter (Agilent), LipidSearch (Thermo), and Compound Discover (Thermo), are also available. Minor equipment includes - 80 °C freezers, nitrogen evaporators, Biotge Extrahera; a robotic SPE instrument for fully automated specialized lipid extractions, a table top centrifuge, a fume hood, rockers, analytical balances, and multisample vortexers.

Major equipment available in the EIMLC:

- Mass Spectrometers
 - Sciex QTrap 5500
 - Thermo ID-X Tribrid
 - Agilent 6495c
- Chromatography
 - Sciex Exion AC HPLC
 - Thermo Vanquish UPLC
 - Agilent 1290 Infinity II
- Software
 - Analyst 1.5
 - Excalibur
 - LipidView
 - LipidSearch

- MassHunter
- MultiQuant
- Compound Discover
- Biotage Extrahera Solid Phase Extraction Robot
- Omni BeadRuptor

Computing

The EILMC has computers networked locally with internet-accessible ethernet lines and to a dedicated 24 Tb backup drive (Synology DiskStation). The EILC office is outfitted with three Dell OptiPlex 9020 computers with dual 24" monitors for data processing and 1TB external storage for local backup.

Office

The EILMC has a 240 sq ft dedicated office on the 4th floor of the O. Wayne Rollins Research Center, which provides space for computational services and customer consultations.