MISSION
The University of Maryland Greenebaum Comprehensive Cancer Center Translational Laboratory Shared Service (TLSS) offers pre-clinical and clinical experimental support to basic researchers and physicians in the UMGCCC community. We work in areas across the entire spectrum: cell biology, in vitro, in vivo and human trials.

CORE RESOURCES
- Access to >120 human/murine cell lines
- Luciferase-expressing breast, head & neck, leukemia, ovarian and prostate cancer cell lines
- IACUC approved umbrella protocol
- Access/Knowledge in Using Xenogen/IVIS Imaging Mice
- Primary Derived Xenograft Models
  - Breast
  - Head and Neck
  - Leukemia
  - Ovarian
  - Pancreatic (under development)
- Access to IRB approved protocol for tissue acquisition

Clinical Trial Support
We isolate:
- Plasma
- Serum
- Whole Blood (isolation of PBMC, DNA, RNA, protein)
- Bone Marrow (isolation of marrow cells)
- Staining of isolated lymphocyte cells
- Coordination with Flow Cytometry Core for analysis
- Exosomes and ct DNA

CORE SERVICES

In Vitro Assays
- Mycoplasma testing
- Clonogenic Survival Assays
- IC50 generation
- Cell cycle (propidium iodide)
- Viability (trypan blue exclusion)
- Apoptosis
- Potentiation/Synergy
- ROS
- Western Analysis
- Angiogenesis

In Vivo Assays
- IACUC approved umbrella protocol
- Tolerability
- Tumor Growth
- Patient Derived Xenograft Models
- Pharmacokinetics: generation of plasma
- Efficacy (flank models)
- Efficacy (orthotopic models)
- Pharmacodynamic Endpoints
- Imaging of cells with Xenogen System

Pharmacodynamic (PD) Endpoints
- in-patient samples, tumor or surrogate tissues, preclinical samples
- Endpoint dependent on target (e.g., ELISA, flow cytometry, Western, unique assay)

CORE INSTRUMENTATION
- ACEA Xcelligence
- Agilent SeaHorse
- Biotek Synergy HT

CRISPR SERVICES
https://www.medschool.umaryland.edu/cibr/Core/CRISPR/
- Gene Knock out
- Gene editing single nucleotide polymorphism
Combination of BCL2 inhibitor Venetoclax (Ven) and long acting Asparaginase (pegcrisantaspase or PegC) inhibits leukemia growth in an orthotopic patient derived xenograft (PDX) model of acute myeloid leukemia. NRG mice were injected with 1x10^6 AML45-luc-YFP-luc cells (primary cells gift of Drs. Martin Carroll and Alexander Perl, UPENN). After engraftment, mice were treated with vehicle, 75 mg/kg Ven PO 5x/week, 250 IU/kg PegC IV 1x/week or their combination. Mice were imaged weekly on the Xenogen IVIS spectrum in the Imaging Core. Leukemia burden is depicted by color from high to low (red, orange, green, blue). Emadi et al Leukemia 35(7): 1907-1924, 2021.

CRISPR SERVICES