

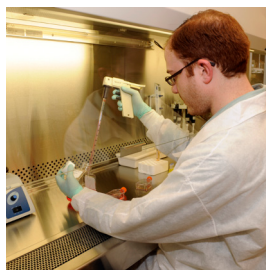
TRANSLATIONAL LABORATORY SHARED SERVICE

CIBR: Center for Innovative Biomedical Resources

CORE SERVICES

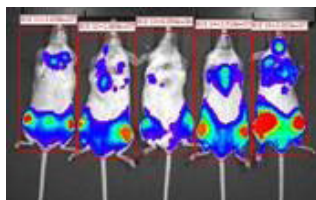
In Vitro Assays

- 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



CORE INSTRUMENTATION

- ACEA Xcelligence
- Nexcelom Celigo
- Agilent SeaHorse
- Biotek Synergy HT

Pharmacodynamic (PD) Endpoints

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

CRISPR SERVICES

<https://www.medschool.umaryland.edu/cibr/Core/CRISPR/>

- Gene Knock out and gene editing single nucleotide polymorphism
- CRISPRa (gene activation) and CRISPRi (gene knock down)
- lentivirus construction and virus production

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

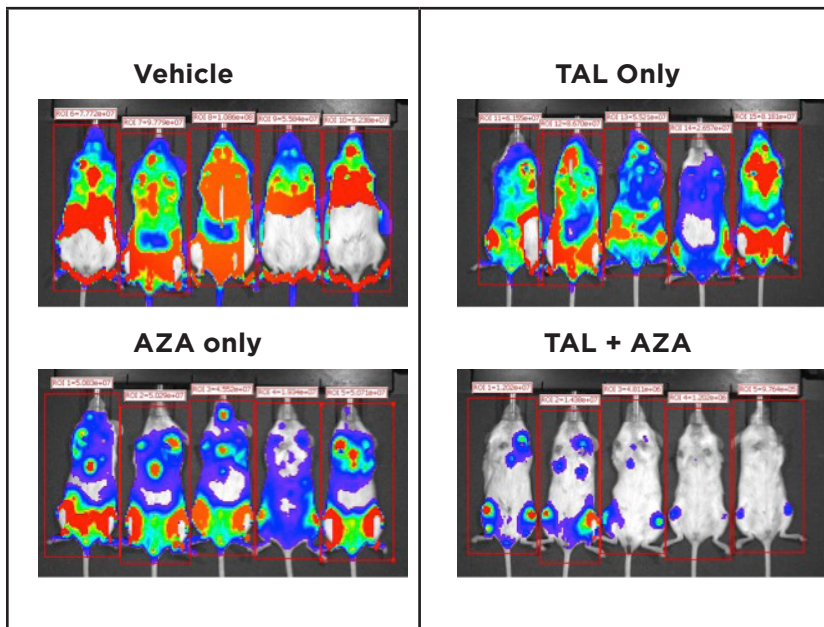
Clinical Trial Support

We isolate:

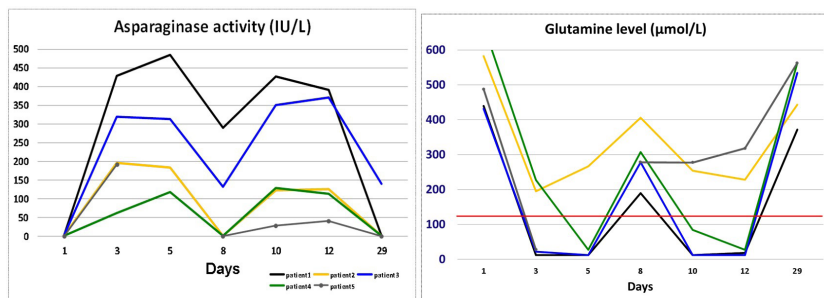
- Plasma
- Serum
- Whole Blood (isolation of PBMC, DNA, RNA, protein)
- Bone Marrow (isolation of marrow cells)
- Staining of isolated lymphocyte cells
 - Coordination with Flow Cytometry Core for analysis
- Exosomes and ct DNA

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Combination of PARP inhibitor Talazoparib (TAL) and the epigenetic agent 5-Azacytidine (AZA) inhibit leukemia growth in NSG mice. Female NSG mice were injected intravenously with 1×10^6 human MV4-11-luc acute myelogenous leukemia cells. After engraftment, mice were sorted into 4 groups of 5 mice and treatment started. Mice received either vehicle, TAL (oral dailyx5), AZA (SC dailyx5) or the combination. The mice were imaged weekly on the Xenogen IVIS imaging system in the Imaging Core. Leukemia burden is depicted by quantity by color in order from high to low (red, orange, green, blue). Muvarak et al. Cancer Cell 30(4): 637-650, 2016



GCC 1336 Pharmacodynamic Effect of Asparaginase *Erwinia Chrysantehmi* on adults with relapsed refractory AML. Erwinase was able to deplete glutamine levels (collaboration with Biochemical Genetics lab at UMB) in the plasma of patients which corresponded to Asparaginase activity levels in plasma of patients at same time points. Five patients were treated with Erwinase on days 1, 3, 5, 8, 10 and 12. Plasma was isolated pre-treatment on each day. Glutamine levels were measured by LCMS in the Biochemical Genetics Lab and Asparaginase levels were measured in the TLSS. Emadi et al. Cancer Chemotherapy and Pharmacology 2017

CONTACT



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http://medschool.umaryland.edu/CIBR/CORE/translational_lab
<http://medschool.umaryland.edu/cibr/Core/CRISPR>