2018 YOUNG INVESTIGATOR GRANT

Augmenting Chimeric Antigen Receptor T Cell Induced Epitope Spreading for Pediatric Solid Tumors

PI: Michael Leibowitz, MD/PhD, Children’s Hospital of Philadelphia

Dr. Leibowitz’s study will look at the potential of an immunotherapy for solid tumors. Immunotherapy has been successful in certain pediatric blood cancers but is hard to replicate in non-blood cancers, like solid tumors. His project investigates a process called “epitope spreading” where cellular immunotherapy induces non-targeted cancer cells to die and triggers the immune system to react against cells that express different bio-markers. His project hopes to expand epitope spreading induced by reprogrammed immune cells in pediatric solid tumors, so that cellular immunotherapy may become a viable treatment option.

UPDATE 1: “With the support of SebastianStrong Foundation, I was able to hire a technician in the lab, which has been very helpful in advancing our project. We are currently performing in vivo mouse experiments to determine whether modification of our CAR T cells to secrete FLT3 ligand enhances killing of solid tumors through epitope spreading. I am excited to see what the data will show.”

UPDATE 2: “Recently, we found that combining an antibody that activates the immune system, used in combination with CAR T cell therapy, augmented epitope spreading and solid tumor regression in mice. I’m in the process of alienating this finding in other tumor models and other strains of mice. I hope to have the experiments complete and ready for publication within the next 6-12 months.”