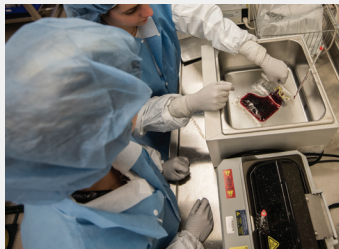


# Research at a Glance

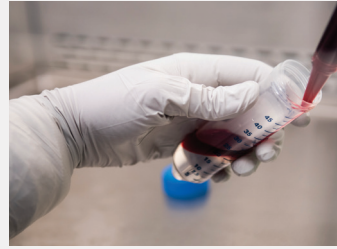
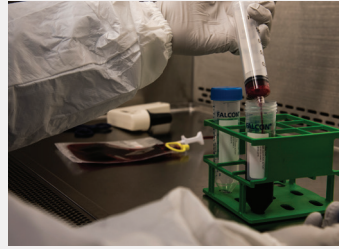
## Expanding cytotoxic T lymphocytes from umbilical cord blood to target three viruses

### What's new:

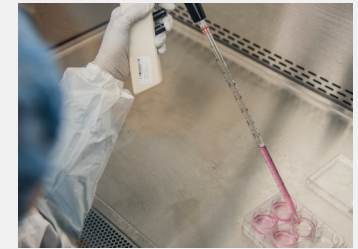
Children's National Health System is the only pediatric hospital in the nation that grows personalized T-cells from naïve cord blood (CB), training these CB-derived cells to simultaneously fight adenovirus, cytomegalovirus, and Epstein-Barr virus to control viral infections after transplantation. Here are a number of the critical steps during that three-month manufacturing process.



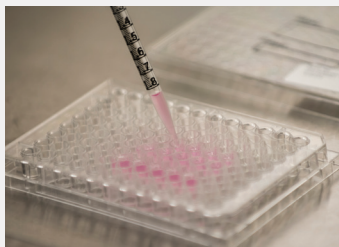
Thaw 20 percent of the cord blood that has been reserved for the patient's transplant.



Isolate the white blood cells.



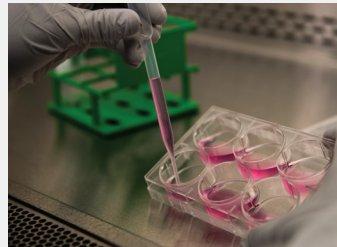
Isolate the dendritic cells by adherence.



Initiate the EBV-LCL.



Mature the dendritic cells by adding cytokines.



Stimulate T-cells using dendritic cells & viral peptides.



Feed the T-cells with growth factors.



Re-stimulate the T-cells two times with the EBV-LCL.