

Supplemental Methods

Assessment of 19–28z CAR T cell persistence.

Protocol NCT00466531

To assess and quantify the survival of the specific ratio of the genetically modified T cells following infusion, the number of 19-28z+ transduced T cells at baseline and at the four week from peripheral blood and/or bone marrow aspirate samples were obtained by Quantitative Real Time-PCR analysis using primers and probe targeting retroviral specific sequences for 19-28z CAR. Subsequently, the ratio of the four week and baseline numbers was computed for analysis. Peripheral blood and bone marrow aspirates were analyzed by FACS using PE conjugated Armenian hamster monoclonal antibody 19E3 specific to the 19-28z CAR for a total number of the modified T cell analysis.

Protocol NCT03085173

Persistence of modified T cells: To assess and quantify the survival of genetically modified T cells, blood samples collected following T-cell infusion were analyzed by FACS using PE conjugated Armenian hamster monoclonal antibody 19E3 specific to the 19-28z CAR, and by Quantitative Real Time-PCR analysis using primers and probe targeting retroviral specific sequences.

Analysis of cytokine profiles following 19–28z CAR T cell infusion.

Protocol NCT00466531

Serial serum samples were obtained before and after administration of conditioning chemotherapy and following CAR T cell infusion. Cytokine profiles were analyzed using the Luminex FlexMAP 3D system and Millipore's Human 38plex Cytokine Magnetic Bead Panel (21–23).

Protocol NCT03085173

Cytokine analysis: Concentrations of proinflammatory (IFN γ , TNF α , GM-CSF, IL-2, IL-4, IL-5, IL-8) and immune suppressive cytokines (TGF β , IL-10) were assessed using the Luminex S100 platform (24).