

Breath of Hope Foundation Grant 2017

“Engineering lung cancer cells into immune stimulatory dendritic cells”

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SCIENTIFIC ABSTRACT

In order to improve responses to anti-PD-1 in non-small cell lung cancer, we hypothesize that administration of dendritic cell (DC) vaccines would increase the proliferation of responding T-cells while also providing more precursor T-cells to respond to anti-PD-1. To generate optimal DC vaccines, we will induce lung cancer cells to transdifferentiate into DCs while also transducing the cells with stimulatory proteins such as IL-17D. These reprogrammed DCs will express the same neoantigens as the parent lung cancer cell and can be used to stimulate T-cell immunity in the patient or to expand neoantigen-specific T-cells in vitro.