INTRODUCTION:
Cytotoxic T-cells (CTLs) in the Tumor Immune Micro Environment (TIME) play an important role in mounting anti-tumor immune response. Adoptively transferred (i.e. T-cell) agent co-stimulates CTLs to reinvigorate them, leading to tumor cytoxicity. The presence of CTLs within tumors does not always guarantee response to I/O agents. Farcast Tumor immune Micro Environment (TIME) is a human histio-culture platform which preserves tumor and stroma along with the immune compartment, over a 48-72 hour culture period. In this study we investigate the abundance and functionality of the intratumoral CTLs post stimulation, across 4 different tumor indications, in order to understand the differential response across samples and indications to immune cell stimulation. These include Head and Neck Squamous cell carcinoma (HNSCC), Renal Cell Carcinoma (RCC), stomach adenocarcinoma (ca-Stomach) and Triple Negative Breast Cancer (TNBC).

RESULTS:
CD8+ immune cells were observed within the TIL populations across all indications at baseline

Differential cytokine response levels were observed across indications in response to prior treatment for indications with >50% CD8+ cell infiltration on HNSCC.

Live CD8+ immune cells were observed across all indications post culture

ca-Stomach and RCC contained relatively higher proportions of activated (Granzyme B+) and exhausted (PD1+)+ CD8+ T-cells at baseline

CONCLUSIONS:
• Farcast histio-culture platform preserves functional TILs and functional T-cell response
• Proportions of T-cells and their response to anti-CDC3 stimulation varies across indications
• Differential T-cell response across indications could be attributed to baseline levels of exhaustion
• Farcast histio-culture platform captures the complex interactions between tumor and intratumoral immune sub-populations with the potential to reproduce patient response to treatment