**Abstracts**

**1147-H**

**NOVEL IMMUNOTHERAPY REGIMENT APPROACH FOR PANCREATIC DUCTAL ADENOCARCINOMA (PDCA) USING HUMAN MUC1 TRANSGENIC MICE (MUC1.TG) MODEL: OPTIMIZING CONDITIONS FOR MVA VACCINE EVALUATION**

1 Larissa Silva*, 2 Sreenivasa Oruganti, 1 Manuel Rodriguez Cardona, 1 Pinku Mukherjee.

**Background**

Effective cancer therapy is still a challenge, and there is a strong need for remarkable therapeutic outcomes. Among the most compelling new cancer approaches are targeted therapies, specialized cancer vaccines (MTI, MVA), 100-mer peptide, and immune checkpoint blocking (ICI) antibodies association. Our initial studies showed that established tumors in mice derived from tumor cell lines expressing a tumor-associated form of MUC1 (TA-MUC1), a cell-surface antigen that presents a tumor-specific glycan structure that is hidden on normal cells, treated with a combination of MTI and ICI, reduce tumor growth and extend survival compared to either agent alone. We are optimizing the conditions for tumor growth kinetics on the human MUC1 transgenic mice (hMUC1.tg), an immune-competent in vivo model, to evaluate a vaccine regimen that can produce a broad spectrum of anti-tumor immune responses.

**Methods**

Two mouse PDCA cell lines (KCM-Luc, Panc02.MUC1) were characterized for a high MUC1 and PD-L1 expression and for tumor growth kinetics in MUC1.tg mice model (N= 8, females and males). The cells were injected subcutaneously in the right flank of the hMUC1.tg mice. The tumor size was measured with calipers once a week with routine surveillance of body weight until the tumor reached 20x20mm³. The serum was collected from the tail at day 7. The survival interval was analyzed, and samples (serum, tumor, spleen, and lymph nodes) were collected for further analysis. The efficacy was measured as reduction or clearance of tumors and survival, the vaccination regimen for KCM-Luc and Panc02.MUC1 are described below (table 1 and 2).

**Results**

We characterized the cells for high levels of MUC1 and PD-L1 expression (>70%). KCM-Luc the best growth kinetics and vaccine efficacy was with 125x10⁶ cells/mice. The combination of MVA-MUC1 with 100-mer and anti-PD1 showed better results and increased animal survival than the non-treated group (figure 1). However, the growth kinetics do not allowed the complete vaccine regimen evaluation, so we used Panc02.MUC1 cell line, showed the best tumor growth kinetics with 0.5x10⁶ cells/mice (figure 2), no significative changes in the body weight, and effective anti-PD-L1 results in prolonged animal survival and slow tumor growth were reported. These results are consistent with previous researchers and will allow the start of the new vaccination regimen (table 2).

**Conclusions**

Those are initial data to optimize the conditions for the next experiments with vaccine evaluation associated with adjuvant drugs to understand the mechanisms of protection investigation cellular and antibody immune responses.

**Acknowledgements**

The authors gratefully acknowledge UNC at Charlotte and GeoVax company.

**REFERENCES**


**Ethics Approval**

This study was approved by the protocol institution’s Ethics Board, IACUC (Institutional Animal Care & Use Committee) at the University of North Carolina at Charlotte (UNCC), approval number 22-018.
Abstract 1147-H Figure 1  KCM-Luc tumor growth kinetics and vaccination regiment evaluation

Abstract 1147-H Table 2  Immunization and sampling schedule Panc02.MUC1 tumor cells vaccination regiment

Abstract 1147-H Figure 2  Panc02.MUC1 tumor growth kinetics evaluation

http://dx.doi.org/10.1136/jitc-2023-SITC2023.1147-H