An Engineered Allogeneic Artificial Antigen-Presenting Red Cell Therapeutic™, RTX-321, Promotes Antigen-Specific T Cell Expansion and Anti-Tumor Activity

INTRODUCTION

Engineered red blood cells (mRBCs) in combination with artificial antigen-presenting cells (aAPCs) targeting TAA promote other target-antigen specific immune responses. This phenotype is seen in the presence of HPV 16 antigen-specific T cells and supports the development of new immunotherapies.

RESULTS

Figure 3: Tumor Models for Efficacy Evaluation of RTX-321 Mouse Surrogates

- C57BL/6 mice were injected intravenously with 1x10^5 B16-F10 tumor cells on Day 0 followed by transfer of 2x10^6 naïve pmel-1 T cells on Days 1, 4, and 8. Mice were sacrificed on Day 14.
- B) Representative lung photos of mice dosed with 1x10^9 mRBC-CTRL, 1x10^9 mRBC-OVA-4-1BBL-IL-12, and 1x10^9 mRBC-gp100-4-1BBL-IL-12. (A) Tumor growth curve after randomization and treatments. (C) In a separate study, CD45.1 Pep Boy mice were inoculated subcutaneously with 2x10^6 EG7.OVA cells. When the tumors reached a volume of ~175 mm^3 on Day 76, the mice were rechallenged with the parental EL4 cell line.

Conclusions

- RTX-321 and its mouse surrogates demonstrate a dual mechanism of action depending on the context.
- mRBC-OVA-4-1BBL-IL-12 promotes other target-antigen specific immune responses.
- mRBC-gp100-4-1BBL-IL-12 is associated with epigenetic changes promoting tumor regression.

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REFERENCES