Engineered Red Cell Therapeutics (RCT) as Artificial Antigen Presenting Cells (aAPCs) Promote Potent In Vivo Expansion and Antitumor Activity of Antigen-Specific T Cells

INTRODUCTION

O-Negative T Cell-APC interactions (and a cytokine at the same time on the same cell to mimic the human immunobiology of MHC ISignal 1

RESUL TS AND METHODS

Figure 3: mRBC-aAPC (OVA) Increases C57BL/6 T Cell Numbers in Both the Splen and Lymph Nodes

Figure 4: mRBC-aAPC (OVA) Promotes Substantial Regressions and Increases Survival in an EG7/OVA Mouse Tumor Model

Figure 5: mRBC-aAPC (OVA) Directly Expands OT1 T Cells in Vitro

Figure 6: Addition of IL-15 or IL-12 (Signal 3) to mRBC-aAPC (OVA) Significantly Enhances Target OT1 T Cell Expansion Beyond TCR Antigen-Specific Signal 1 and a MBL Signal of Engagement

RESULTS AND METHODS

Table 1: Cytokine Production by mRBC-aAPC (OVA), mRBC-aAPC (OVA)–IL-15, and mRBC-aAPC (OVA)–IL-12 on Days 1 and 4 after Injection into CD45.1 Mice

<table>
<thead>
<tr>
<th>Cytokine</th>
<th>mRBC-aAPC (OVA)</th>
<th>mRBC-aAPC (OVA)–IL-15</th>
<th>mRBC-aAPC (OVA)–IL-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>INF γ</td>
<td>1000 pg/ml</td>
<td>4000 pg/ml</td>
<td>4000 pg/ml</td>
</tr>
<tr>
<td>IL-12</td>
<td>1000 pg/ml</td>
<td>4000 pg/ml</td>
<td>4000 pg/ml</td>
</tr>
</tbody>
</table>

OT1 toxicity in vivo, likely due to restriction to the vasculature.

CONCLUSIONS

• HPV-driven cancers are infection-related cancers in the head and neck worldwide

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REFERENCES


