



**Supplementary Figure 5** Recognition of neoantigens by enriched populations of TMG-reactive cells isolated from the tumor-derived CD8<sup>+</sup>PD-1<sup>+</sup> subsets from subjects NCI-3998, 3903, and 3784. **(a)** NCI-3998 TMG1- (left) and TMG5-reactive TIL (right) were cocultured with DCs pulsed with WT and Mut MAGEA6<sub>E>K</sub> or MED13P>S minimal epitopes. TMG9-reactive TIL isolated from the tumor of NCI-3903 were cocultured with DCs pulsed with WT or Mut KIF1BP<sub>P>S</sub> minimal epitopes **(b)**, and NCI-3784 TMG3- (left), TMG5- (middle) and TMG8-reactive TIL (right) were cocultured with autologous DCs pulsed with the WT or Mut 25-mers indicated **(c)**. Percentage of 4-1BB expression or IFN-γ spots/2 × 10<sup>4</sup> cells at 20 h is shown. ">" denotes greater than 500 spots per 2 × 10<sup>4</sup> cells. All data are representative of at least two independent experiments.