CLAIMS

1. A vector comprising: a nucleotide sequence encoding a first shRNA that inhibits expression of Programmed Cell Death 1 (PD-1), a nucleotide sequence encoding a second shRNA that inhibits expression of T cell immunoreceptor with Ig and ITIM domains (TIGIT), and a nucleotide sequence encoding a chimeric antigen receptor (CAR).

2. The vector of claim 1, wherein the expression of the first shRNA is regulated by a first promoter and the second shRNA is regulated by a second promoter.

3. The vector of claim 2, wherein the first and the second promoters are RNA polymerase III promoters.

4. The vector of claim ~~2 or~~ 3, wherein the RNA polymerase III promoters are U6 promoters.

5. The vector of any one of claims 2-4, wherein the two promoters are oriented in different directions from each other on the vector.

6. The vector of claim 5, wherein the two promoters are oriented in ~~head to head orientation~~a direction towards each other.

7. The vector of claim 5, wherein the two promoters are oriented in~~ tail to tail orientation~~ a direction opposing each other.

8. An immune cell comprising the vector of any one of claims 1-7.

9. The immune cell of claim 8, wherein ~~the~~a target antigen is a cancer antigen whose expression is increased in or on the surface of a cancer cell, a cancer tissue, and/or a tumor microenvironment.

10. The immune cell of claim 8 or 9-, wherein the target antigen is CD19 or CD22.

11. The immune cell of any one of claims 8-10, wherein the immune cell is a human-derived T cell, a dendritic cell or natural killer (NK) cell.

12. The immune cell of any one of claims 8-11 , wherein the immune cell is a human-derived T cell.

13. The immune cell of any one of claims 8-12, wherein the intracellular signal transduction domain of the CAR further comprises a costimulatory molecule selected from the group consisting of ICOS, OX40, CD137 (4-1BB), CD27, and CD28.

14. A pharmaceutical composition comprising the immune cell of any one of claims ~~1~~8-13 and a pharmaceutically acceptable carrier.

15. The pharmaceutical composition of claim 14 for use in a method of treating $CD19^+$ $PD\text{-}L1^+$ cancer in a human subject.