

CLAIMS:

1. A method of inducing expansion of a chimeric antigen receptor (CAR) T cell comprising:

incubating the CAR T cell with a hapten antigen presenting cell (H-APC), wherein the incubating is performed *ex vivo*, and wherein the CAR T cell comprises a first CAR which specifically binds to a cancer antigen and a second CAR which specifically binds to a hapten attached to the H-APC.

2. The method of claim 1, wherein the hapten is fluorescein

3. The method of claim 1 or claim 2, wherein the first CAR comprises an scFv comprising an amino acid sequence set forth in SEQ ID NOs. 01-06, 08 or 10.

4. The method of any one of claims 1-3, further comprising attaching *ex vivo* the hapten to an extracellular surface of the H-APC.

5. The method of any one of claims 1-4, wherein the hapten is attached to the H-APC via a phospholipid.

6. The method of any one of claims 1-5, wherein the hapten is attached to the H-APC via a phospholipid ether (PLE).

7. The method of any one of claims 1-6, wherein the CAR T cell and the H-APC are derived from a single subject.

8. Use of a chimeric antigen receptor (CAR) T cell in the preparation of a medicament for treating, inhibiting, or ameliorating a cancer in a subject, wherein:

the CAR T cell comprises a first CAR which specifically binds to a tumor specific antigen of the cancer and a second CAR which specifically binds to a hapten; and

the CAR T cell is stimulated or restimulated by a hapten antigen presenting cell (H-APC), comprising the hapten, wherein the CAR T cell is to be administered to the subject in combination with the H-APC.

9. The use of claim 8, wherein the stimulating or restimulating is repeated.

10. The use of claim 8 or claim 9, wherein the CAR T cell and the H-APC are derived from the subject.

11. The use of any one of claims 8-10, wherein the tumor specific antigen is selected from the group consisting of CD19, CD22, HER2, CD7, CD30, B cell maturation

antigen (BCMA), GD2, glypican-3, MUC1, CD70, CD33, epithelial cell adhesion molecule (EpCAM), Epidermal Growth Factor variant III, receptor tyrosine kinase-like orphan receptor 1 (ROR1), CD123, Prostate Stem Cell Antigen (PSCA), CD5, Lewis Y antigen, B7H3, CD20, CD43, HSP90, and IL13.

12. The use of any one of claims 8-11, wherein the hapten is fluorescein.

13. The use of any one of claims 8-12, wherein the first CAR comprises an scFv comprising an amino acid sequence set forth in SEQ ID NOs 01-06, 08 or 10.

14. The use of any one of claims 8-13, wherein the hapten is covalently attached to the extracellular surface of the H-APC.

15. The use of any one of claims 8-14, wherein the hapten is attached to the H-APC via a phospholipid ether (PLE).

16. The use of any one of claims 8-15, wherein the CAR T cell is derived from a CD4⁺ cell, a CD8⁺ cell, a precursor T cell, or a hematopoietic stem cell; and wherein the H-APC is derived from a T cell or a B cell.

17. The use of any one of claims 8-16, wherein the CD8⁺ cell is a CD8⁺ T cytotoxic lymphocyte cell selected from the group consisting of a naïve CD8⁺ T cell, a central memory CD8⁺ T cell, an effector memory CD8⁺ T cell, and a bulk CD8⁺ T cell; the CD4⁺ cell is a CD4⁺ T helper lymphocyte cell selected from the group consisting of a naïve CD4⁺ T cell, a central memory CD4⁺ T cell, an effector memory CD4⁺ T cell, and a bulk CD4⁺ T cell.

18. The use of any one of claims 8-17, wherein the subject is mammalian.