WHAT IS CLAIMED IS:

1. Use of an Akt inhibitor in the manufacture of a medicament for treating a subject, wherein treating the subject comprises

(a) adoptively transferring to the subject an effective amount of a composition comprising a CAR-T cell, and

(b) administering to the subject the Akt inhibitor in an amount effective to increase the persistence of the CAR-T cells.

2. Use of a composition comprising a CAR-T cell in the manufacture of a medicament for treating a subject, wherein treating the subject comprises

(a) adoptively transferring to the subject an effective amount of the composition comprising the CAR-T cell, and

(b) administering to the subject an Akt inhibitor in an amount effective to increase the persistence of the CAR-T cells.

3. Use of an Akt inhibitor in the manufacture of a medicament for enhancing CAR-T cell therapy in a subject undergoing adoptive cell transfer of therapeutic CAR-T cells, wherein the Akt inhibitor is in an amount effective to increase the persistence of the CAR-T cells.

4. The use of any one of claims 1 to 3, wherein the Akt inhibitor is an allosteric inhibitor.

5. The use of any one of claims 1 to 4, wherein the Akt inhibitor is a purine derivative.

6. The use of any one of claims 1 to 5, wherein the Akt inhibitor is Triciribine (TCN).

7. The use of any one of claims 1 to 6, wherein the CAR-T cell comprises an immune effector cell comprising a chimeric antigen receptor (CAR) polypeptide that comprises a tumor associated antigen (TAA) binding domain, a transmembrane domain, an intracellular signaling domain, and a co-stimulatory signaling region.

8. The use of claim 7, wherein the immune effector cell is selected from the group consisting of an αβT cell, γδT cell, a Natural Killer T (NKT) cell, a cytotoxic T lymphocyte (CTL), a regulatory T cell, or any combination thereof.

9. The use of any one of claims 1 to 8, wherein the medicament is for treating cancer in the subject or for enhancing CAR-T cell therapy of cancer in the subject.