

Claims

1. A plasmid combination, wherein the plasmid combination comprises plasmids Seq1, PMD2.G, pMDLg-pRRE and pRSV-Rev; and the plasmids Seq1, PMD2.G, pMDLg-pRRE and pRSV-Rev are present at a ratio of 2-6: 1-1.5: 1-3: 1-1.5; wherein the plasmid Seq1 comprises a nucleic acid molecule encoding a chimeric antigen receptor, wherein the chimeric antigen receptor comprises an amino acid sequence shown in SEQ ID NO. 1.
2. The plasmid combination according to claim 1, wherein the plasmid Seq1 comprises a nucleic acid molecule encoding a chimeric antigen receptor, wherein the nucleic acid molecule comprises a nucleic acid sequence shown in SEQ ID NO. 2.
3. A plasmid combination, wherein the plasmid combination comprises plasmids Seq1, PMD2.G, pMDLg-pRRE and pRSV-Rev; and the plasmids Seq1, PMD2.G, pMDLg-pRRE and pRSV-Rev are present at a ratio of 11.8: 3.53: 6.33: 2.3, 13.8: 3.48: 5.31: 2.54 or 14: 4.67: 4.67: 4.67; wherein the plasmid Seq1 comprises a nucleic acid molecule encoding a chimeric antigen receptor, wherein the chimeric antigen receptor comprises an amino acid sequence shown in SEQ ID NO. 1.
4. A method for preparing a lentiviral vector, the method comprising introducing the plasmid combination according to any of claims 1 to 3 into a cell.
5. The method according to claim 4, wherein the cell is 293T.
6. A method for preparing a modified immune effector cell, comprising the following steps:
preparing the lentiviral vector according to the method according to either of claims 4-5; and
introducing the lentiviral vector into an immune effector cell.
7. The method according to claim 6, wherein the immune effector cell is selected from the group consisting of a T lymphocyte and a natural killer cell.
8. A modified immune effector cell, comprising a chimeric antigen receptor comprising an amino acid sequence shown in SEQ ID NO. 1.
9. The modified immune effector cell according to claim 8, wherein the immune effector cell can express the chimeric antigen receptor.
10. A composition comprising the modified immune effector cell according to either of claims 8-9.

11. Use of the immune effector cell according to either of claims 8-9 and/or the composition according to claim 10 in the manufacture of a medicament, wherein the medicament is useful for the treatment of a disease or disorder associated with CD19 expression; wherein the disease or disorder associated with CD19 expression comprises non-solid tumors.
12. The use according to claim 11, wherein the non-solid tumor comprises leukemia and/or lymphoma.
13. The use according to claim 12, wherein the leukemia comprises acute lymphoblastic leukemia, and the lymphoma comprises B-cell lymphoma.
14. The use according to claim 13, wherein the acute lymphoblastic leukemia comprises acute lymphoblastic leukemia in adults and/or acute lymphoblastic leukemia in children.
15. The use according to claim 14, wherein the medicament is to be administered at a dose of 0.25×10^8 to 0.5×10^8 CAR-positive T cells.
16. The use according to claim 13, wherein the B-cell lymphoma comprises non-Hodgkin's lymphoma.
17. The use according to claim 16, wherein the medicament is to be administered at a dose of 1×10^8 to 2×10^8 CAR-positive T cells.
18. The immune effector cell according to either of claims 8-9 and/or the composition according to claim 10, for use in the treatment of a disease or disorder associated with CD19 expression; wherein the disease or disorder associated with CD19 expression comprises non-solid tumors.
19. The composition and/or the immune effector cell according to claim 18, wherein the non-solid tumor comprises leukemia and/or lymphoma.
20. The composition and/or the immune effector cell according to claim 19, wherein the leukemia comprises acute lymphoblastic leukemia, and the lymphoma comprises B-cell lymphoma.
21. The composition and/or the immune effector cell according to claim 20, wherein the acute lymphoblastic leukemia comprises acute lymphoblastic leukemia in adults and/or acute lymphoblastic leukemia in children.
22. The composition and/or the immune effector cell according to claim 21, wherein the administration is performed at a dose of 0.25×10^8 to 0.5×10^8 CAR-positive T cells.
23. The composition and/or the immune effector cell according to claim 20, wherein the B-cell lymphoma comprises non-Hodgkin's lymphoma.

24. The composition and/or the immune effector cell according to claim 23, wherein the administration is performed at a dose of 1×10^8 to 2×10^8 CAR-positive T cells.