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 the chimeric antigen receptor, wherein the chimeric antigen receptor comprises an amino acid sequence shown in SEQ ID NO. 1.~~

~~3~~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.

~~4~~3. ~~The~~ A plasmid combination~~ according to claim 1~~, 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.

~~5~~4. A method for preparing a lentiviral vector, the method comprising introducing the plasmid combination according to any of claims 1 to ~~4~~ 3 into a cell.

~~6~~5. The method according to claim ~~5~~4, wherein the cell is 293T.

~~7~~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 ~~5~~4-~~6~~5; and

introducing the lentiviral vector into an immune effector cell.

~~8. The method according to claim 7, comprising introducing the lentiviral vector into an immune effector cell.~~

~~9~~7. The method according to claim ~~8~~6, wherein the immune effector cell is selected from the group consisting of a T lymphocyte and a natural killer cell.

~~10~~8. A modified immune effector cell, comprising a chimeric antigen receptor comprising an amino acid sequence shown in SEQ ID NO. 1~~prepared by the method according to any of~~

~~claims 7 to 9~~.

~~11~~9. The modified immune effector cell according to claim ~~10~~8, wherein the immune effector cell can express the chimeric antigen receptor.

~~12~~10. A composition comprising the modified immune effector cell according to either of claims ~~10~~8-~~11~~9.

~~13~~11. Use of the immune effector cell according to either of claims ~~10~~8-~~11~~ 9 and/or the composition according to claim ~~12~~ 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.

~~14. The use according to claim 13, wherein the disease or disorder associated with CD19 expression comprises non-solid tumors.~~

~~15~~12. The use according to claim ~~14~~11, wherein the non-solid tumor comprises leukemia and/or lymphoma.

~~16~~13. The use according to claim ~~13~~12, wherein the leukemia ~~disease or disorder associated with CD19 expression~~ comprises acute lymphoblastic leukemia, and the lymphoma comprises ~~/or~~ B-cell lymphoma.

~~17~~14. The use according to claim ~~16~~13, wherein the acute lymphoblastic leukemia comprises acute lymphoblastic leukemia in adults and/or acute lymphoblastic leukemia in children.

~~18~~15. The use according to claim ~~17~~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.

~~19~~16. The use according to claim ~~16~~13, wherein the B-cell lymphoma comprises non-Hodgkin's lymphoma.

~~20~~17. The use according to claim ~~19~~16, wherein the medicament is to be administered at a dose of 1×10^8 to 2×10^8 CAR-positive T cells.

~~21~~18. The immune effector cell according to either of claims ~~10~~8-~~11~~ 9 and/or the composition according to claim ~~12~~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.

~~22. The composition and/or the immune effector cell according to claim 21, wherein the disease or disorder associated with CD19 expression comprises non-solid tumors.~~

~~23~~19. The composition and/or the immune effector cell according to claim ~~22~~18, wherein the non-solid tumor comprises leukemia and/or lymphoma.

~~24~~20. The composition and/or the immune effector cell according to claim ~~21~~19, wherein the leukemia comprises acute lymphoblastic leukemia, and the lymphoma comprises B-cell lymphoma~~the disease or disorder associated with CD19 expression comprises acute lymphoblastic leukemia and/or B-cell lymphoma~~.

~~25~~21. The composition and/or the immune effector cell according to claim ~~24~~20, wherein the acute lymphoblastic leukemia comprises acute lymphoblastic leukemia in adults and/or acute lymphoblastic leukemia in children.

~~26~~22. The composition and/or the immune effector cell according to claim ~~25~~21, wherein the administration is performed at a dose of 0.25×10^8 to 0.5×10^8 CAR-positive T cells.

~~27~~23. The composition and/or the immune effector cell according to claim ~~24~~20, wherein the B-cell lymphoma comprises non-Hodgkin's lymphoma.

~~28~~24. The composition and/or the immune effector cell according to claim ~~27~~23, wherein the administration is performed at a dose of 1×10^8 to 2×10^8 CAR-positive T cells.