Claims

1. Use of an anti-CD19 antibody in the manufacture of a medicament for the treatment of a hematological cancer, wherein the anti-CD19 antibody is to be administered with γδ T-cells, wherein the anti-CD19 antibody consists of two heavy chains and two light chains, wherein each heavy chain comprises a heavy chain variable region comprising an HCDR1 region comprising the sequence SYVMH (SEQ ID NO:1), an HCDR2 region comprising the sequence NPYNDG (SEQ ID NO:2), and an HCDR3 region comprising the sequence GTYYYGTRVFDY (SEQ ID NO:3) and wherein each light chain comprises a light chain variable region comprising an LCDR1 region comprising the sequence RSSKSLQNVNGNTYLY (SEQ ID NO:4), an LCDR2 region comprising the sequence RMSNLNS (SEQ ID NO:5), and an LCDR3 region comprising the sequence MQHLEYPIT (SEQ ID NO:6).

2. Use of γδ T-cells in the manufacture of a medicament for the treatment of a hematological cancer, wherein the γδ T-cells are to be administered with an anti-CD19 antibody, wherein the anti-CD19 antibody consists of two heavy chains and two light chains, wherein each heavy chain comprises a heavy chain variable region comprising an HCDR1 region comprising the sequence SYVMH (SEQ ID NO:1), an HCDR2 region comprising the sequence NPYNDG (SEQ ID NO:2), and an HCDR3 region comprising the sequence GTYYYGTRVFDY (SEQ ID NO:3) and wherein each light chain comprises a light chain variable region comprising an LCDR1 region comprising the sequence RSSKSLQNVNGNTYLY (SEQ ID NO:4), an LCDR2 region comprising the sequence RMSNLNS (SEQ ID NO:5), and an LCDR3 region comprising the sequence MQHLEYPIT (SEQ ID NO:6).

3. The use according to claim 1 or claim 2, wherein said γδ T-cells comprise an enriched γδ T-cell population.

4. The use according to any one of claims 1 to 3, wherein said γδ T-cells comprise non-engineered γδ T-cells.

5. The use according to any one of claims 1 to 3, wherein said γδ T-cells comprise engineered γδ T-cells.

6. The use according to any one of claims 1 to 5, wherein said γδ T-cells have been isolated from peripheral blood.

7. The use according to any one of claims 1 to 5, wherein said γδ T cells have been isolated from tumor tissue.

8. The use according to any one of claims 1 to 5, wherein said γδ T cells have been isolated from non-hematopoietic tissue.

9. The use according to any one of claims 1 to 5, wherein said γδ T-cells have been isolated from peripheral blood and were cultivated in the presence of IL-2 and zoledronic acid (ZOL).

10. The use according to any one of claims 1 to 5, wherein said γδ T-cells are blood-derived Vγ9Vδ2 T-cells.

11. The use according to any one of claims 1 to 10, wherein said anti-CD19 antibody and the γδ T-cells are to be administered in a separate manner.

12. The use according to any one of claims 1 to 10, wherein said anti-CD19 antibody and the γδ T-cells are to be administered in a simultaneous manner.

13. The use according to any one of claims 1 to 12, wherein said anti-CD19 antibody has enhanced antibody-dependent cell-mediated cytotoxicity activity.

14. The use according to any one of the claims 1 to 14, wherein said anti-CD19 antibody comprises an Fc domain comprising an amino acid substitution at position S239 and/or I332, wherein the numbering is according to the EU index as in Kabat.

15. The use according to any one of the claims 1 to 14, wherein said anti-CD19 antibody comprises a heavy chain constant region; wherein the heavy chain constant region

of the anti-CD19 antibody comprises amino acids 239D and 332E, and wherein the Fc numbering is according to the EU index as in Kabat.

16. The use according to any one of claims 1 to 15, wherein the amino acid sequence of each of the heavy chain variable regions is set forth in SEQ ID NO: 7 and the amino acid sequence of each of the light chain variable regions is set forth in SEQ ID NO: 8.

17. The use according to any one of claims 1 to 16, wherein the amino acid sequence of each of the heavy chains is set forth in SEQ ID NO: 11 and the amino acid sequence of each of the light chains is set forth in SEQ ID NO: 12.

18. The use according to any one of claims 1 to 17, wherein the hematological cancer is chronic lymphocytic leukemia.

19. The use according to any one of claims 1 to 17, wherein the hematological cancer is small lymphocytic lymphoma.

20. The use according to any one of claims 1 to 17, wherein the hematological cancer is acute lymphoblastic leukemia.

21. The use according to any one of claims 1 to 17, wherein the hematological cancer is a non-Hodgkin’s lymphoma.

22. The use according to claim 21, wherein the non-Hodgkin’s lymphoma is follicular lymphoma.

23. The use according to claim 21, wherein the non-Hodgkin’s lymphoma is mucosa-associated lymphoid tissue lymphoma.

24. The use according to claim 21, wherein the non-Hodgkin’s lymphoma is marginal zone lymphoma.

25. The use according to claim 21, wherein the non-Hodgkin’s lymphoma is diffuse large B cell lymphoma.

26. The use according to claim 21, wherein the non-Hodgkin’s lymphoma is Burkitt's lymphoma.

27. The use according to claim 21, wherein the non-Hodgkin’s lymphoma is mantle cell lymphoma.