

CLAIMS

1. Use of an anti-CD43 antibody or antigen-binding fragment thereof in the manufacture of a medicament for treating a CD43 positive cancer,
- 5 wherein the antibody or the antigen-binding fragment thereof comprises a heavy chain variable domain (VH) and a light chain variable domain (VL),
- wherein the VH comprises framework regions and complementarity determining regions (CDRs) having the sequences SEQ ID NO: 1; SEQ ID NO: 43; and SEQ ID NO: 3, and the VL comprises framework regions and CDRs having the sequences SEQ
- 10 ID NO: 4; SEQ ID NO: 5; and SEQ ID NO: 6, and
- wherein the CD43 positive cancer is selected from the group consisting of: diffuse large B cell lymphoma, MALT lymphoma, Burkitt's lymphoma, anaplastic large cell lymphoma, follicular lymphoma, mantle cell lymphoma, multiple myeloma, melanoma, testicular cancer, nephroblastoma, neuroblastoma, endodermal sinus
- 15 carcinoma, retinoblastoma, hepatoblastoma, medulloblastoma, choroid plexus papilloma, glioblastoma, ependymoma, primitive neuroectodermal tumor, alveolus rhabdomyosarcoma, immaturity teratoma, and leiomyosarcoma.
2. The use according to claim 1, wherein the anti-CD43 antibody or antigen-
- 20 binding fragment binds an epitope within amino acids 61-91 of wild-type CD43.
3. The use according to claim 1 or 2, wherein the anti-CD43 antibody or antigen-binding fragment binds amino acids 71-78 of wild-type CD43.
- 25 4. The use according to claim 1 or 2, wherein the anti-CD43 antibody or antigen-binding fragment binds amino acids 73-78 of wild-type CD43.
5. The use according to claim 1, wherein the VH sequence is SEQ ID NO: 7 and the VL sequence is SEQ ID NO: 12.

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6. The use according to claim 1 or 5, wherein the anti-CD43 antibody is a murine antibody produced by the hybridoma cell line deposited under ICLC accession number ICLC PD number 16001 (UMG1).
- 5 7. The use according to claim 1 or 5, wherein the anti-CD43 antibody is a chimeric antibody further comprising human constant region domains.
8. The use according to claim 7, wherein the human constant region domains are IgG domains.
- 10 9. The use according to claim 8, wherein the antibody heavy chain sequence is SEQ ID NO: 34 and the antibody light chain sequence is SEQ ID NO: 35.
- 15 10. The use according to claim 1, wherein the anti-CD43 antibody or antigen-binding fragment comprises human variable domain framework regions.
11. The use according to claim 10, wherein the VH domain has a sequence selected from: SEQ ID NO: 8, SEQ ID NO: 9, SEQ ID NO: 10, and SEQ ID NO: 11; and the VL domain has a sequence selected from: SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 20 15, and SEQ ID NO: 16.
12. The use according to any of the preceding claims, wherein the anti-CD43 antibody is a monoclonal antibody.
- 25 13. The use according to any of the preceding claims, wherein the anti-CD43 antibody or antigen-binding fragment is an F(ab), an F(ab)'₂, an scFv, a diabody, a single domain antibody, a tandab, or a flexibody.

14. The use according to any of the preceding claims, wherein the anti-CD43 antibody or antigen-binding fragment is capable of inducing antibody dependent cellular cytotoxicity (ADCC) in the presence of an effector cell.
- 5 15. The use according to any of the preceding claims, wherein the anti-CD43 antibody or antigen-binding fragment is capable of depleting tumor-associated macrophages (TAMs).
16. The use according to any of the preceding claims, wherein the anti-CD43
10 antibody or antigen-binding fragment is conjugated to a toxic drug.
17. The use according to any of the preceding claims, wherein the patient has diffuse large B cell lymphoma, MALT lymphoma, Burkitt lymphoma, anaplastic large cell lymphoma, follicular lymphoma, or mantle cell lymphoma.
- 15 18. The use according to any one of claims 1 to 16, wherein the patient has multiple myeloma.
19. The use according to any one of claims 1 to 16, wherein the patient has
20 melanoma.
20. The use according to any one of claims 1 to 16, wherein the patient has testicular cancer.
- 25 21. The use according to claim 20, wherein the testicular cancer is selected from the group consisting of: seminoma, embryonal carcinoma, yolk sac tumor, and teratoma.
22. The use according to any one of claims 1 to 16, wherein the patient has nephroblastoma, neuroblastoma, endodermal sinus carcinoma, retinoblastoma,
30 hepatoblastoma, medulloblastoma, choroid plexus papilloma, glioblastoma,

ependymoma, primitive neuroectodermal tumor, alveolus rhabdomyosarcoma, immaturity teratoma, or leiomyosarcoma.

23. Use of a bispecific antibody in the manufacture of a medicament for treating a
5 CD43 positive cancer,

wherein the bispecific antibody has a first binding specificity for an epitope within amino acids 71-78 of wild-type CD43, and

wherein the CD43 positive cancer is selected from the group consisting of:
diffuse large B cell lymphoma, MALT lymphoma, Burkitt's lymphoma, anaplastic large
10 cell lymphoma, follicular lymphoma, mantle cell lymphoma, multiple myeloma, melanoma, testicular cancer, nephroblastoma, neuroblastoma, endodermal sinus carcinoma, retinoblastoma, hepatoblastoma, medulloblastoma, choroid plexus papilloma, glioblastoma, ependymoma, primitive neuroectodermal tumor, alveolus rhabdomyosarcoma, immaturity teratoma, and leiomyosarcoma.

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24. The use according to claim 23, wherein the bispecific antibody has a second binding specificity for CD3.

25. Use of a CAR-T cell in the manufacture of a medicament for treating a CD43
20 positive cancer,

wherein the CAR-T cell binds an epitope within amino acids 71-78 of wild-type CD43, and

wherein the CD43 positive cancer is selected from the group consisting of:
diffuse large B cell lymphoma, MALT lymphoma, Burkitt's lymphoma, anaplastic large
25 cell lymphoma, follicular lymphoma, mantle cell lymphoma, multiple myeloma, melanoma, testicular cancer, nephroblastoma, neuroblastoma, endodermal sinus carcinoma, retinoblastoma, hepatoblastoma, medulloblastoma, choroid plexus papilloma, glioblastoma, ependymoma, primitive neuroectodermal tumor, alveolus rhabdomyosarcoma, immaturity teratoma, and leiomyosarcoma.

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26. An *in vitro* method of identifying a CD43 positive cancer, the method comprising:
- detectably contacting an *in vitro* sample comprising a CD43 positive cancer cell with an anti-CD43 antibody or antigen-binding fragment thereof,
- 5 wherein the anti-CD43 antibody or antigen-binding fragment binds an epitope within amino acids 71-78 of wild-type CD43, and
- wherein the CD43 positive cancer is selected from the group consisting of: diffuse large B cell lymphoma, MALT lymphoma, Burkitt's lymphoma, anaplastic large cell lymphoma, follicular lymphoma, mantle cell lymphoma, multiple myeloma,
- 10 melanoma, testicular cancer, nephroblastoma, neuroblastoma, endodermal sinus carcinoma, retinoblastoma, hepatoblastoma, medulloblastoma, choroid plexus papilloma, glioblastoma, ependymoma, primitive neuroectodermal tumor, alveolus rhabdomyosarcoma, immaturity teratoma, and leiomyosarcoma.
- 15 27. An *in vitro* method of diagnosing a CD43 positive cancer, the method comprising:
- detectably contacting an *in vitro* sample from a patient with the anti-CD43 antibody or antigen-binding fragment, and
- diagnosing the patient with a CD43 positive cancer if a binding to the anti-CD43
- 20 antibody or antigen-binding fragment is detected,
- wherein the anti-CD43 antibody or antigen-binding fragment binds an epitope within amino acids 71-78 of wild-type CD43, and
- wherein the CD43 positive cancer is selected from the group consisting of: diffuse large B cell lymphoma, MALT lymphoma, Burkitt's lymphoma, anaplastic large
- 25 cell lymphoma, follicular lymphoma, mantle cell lymphoma, multiple myeloma, melanoma, testicular cancer, nephroblastoma, neuroblastoma, endodermal sinus carcinoma, retinoblastoma, hepatoblastoma, medulloblastoma, choroid plexus papilloma, glioblastoma, ependymoma, primitive neuroectodermal tumor, alveolus rhabdomyosarcoma, immaturity teratoma, and leiomyosarcoma.