

CLAIMS

1. An anti-CLDN18.2 antibody comprising a variable heavy chain (VH) region and a variable light chain (VL) region, wherein the VH region comprises
CDR1 sequence $X_{21}X_{22}X_{23}X_{24}X_{25}$ SFGMH;
wherein X_{21} is present or absent, if present, is G; X_{22} is present or absent, if present, is F; X_{23} is present or absent, if present, is T; X_{24} is present or absent, if present, is F; and X_{25} is present or absent, if present, is S;
CDR2 sequence YISSGS $X_{26}X_{27}$ IYY X_{28} DX $X_{29}X_{30}$ KG;
wherein X_{26} is selected from S or G; X_{27} is selected from P or S; X_{28} is selected from V or A; X_{29} is selected from K or T; and X_{30} is selected from L or V; and
CDR3 sequence A $X_{31}X_{32}X_{33}X_{34}X_{35}X_{36}X_{37}X_{38}X_{39}X_{40}X_{41}$;
wherein X_{31} is selected from G or T; X_{32} is selected from Y or S; X_{33} is selected from A or Y; X_{34} is selected from V or Y; X_{35} is selected from R or Y; X_{36} is selected from N or G; X_{37} is selected from A or N; X_{38} is selected from L or A; X_{39} is selected from D or L; X_{40} is selected from Y or E; and X_{41} is present or absent, if present, is Y,
wherein the VL region comprises a CDR1 sequence selected from SEQ ID NOs: 18, 21, 24-28, 31-35, 38, or 39, a CDR2 sequence selected from SEQ ID NOs: 19, 22, 29, or 36, and a CDR3 sequence selected from SEQ ID NOs: 20, 23, 30, or 37.
2. The anti-CLDN18.2 antibody of claim 1, wherein the VH region comprises CDR1 sequence consisting of SEQ ID NO: 7, CDR2 sequence consisting of SEQ ID NO: 8, and CDR3 sequence consisting of SEQ ID NO: 9.
3. The anti-CLDN18.2 antibody of claim 1, wherein the VH region comprises CDR1 sequence consisting of SEQ ID NO: 10, CDR2 sequence consisting of SEQ ID NO: 11, and CDR3 sequence consisting of SEQ ID NO: 12.
4. The anti-CLDN18.2 antibody of claim 1, wherein the VL region comprises CDR1 sequence selected from SEQ ID NOs: 21 or 24-27; CDR2 sequence consisting of SEQ ID NO: 22; and CDR3 sequence consisting of SEQ ID NO: 23.

5. The anti-CLDN18.2 antibody of claim 1, wherein the VL region comprises CDR1 sequence selected from SEQ ID NOs: 28 or 31-34; CDR2 sequence consisting of SEQ ID NO: 29; and CDR3 sequence consisting of SEQ ID NO: 30.
6. The anti-CLDN18.2 antibody of claim 1, wherein the VL region comprises CDR1 sequence selected from SEQ ID NOs: 35, 38, or 39; CDR2 sequence consisting of SEQ ID NO: 36; and CDR3 sequence consisting of SEQ ID NO: 37.
7. The anti-CLDN18.2 antibody of claim 1, wherein the VL region comprises CDR1 sequence consisting of SEQ ID NO: 18, CDR2 sequence consisting of SEQ ID NO: 19, and CDR3 sequence consisting of SEQ ID NO: 20.
8. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody is a full-length antibody.
9. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody is a binding fragment.
10. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises a monovalent Fab', a divalent Fab2, a single-chain variable fragment (scFv), a diabody, a minibody, a nanobody, a single-domain antibody (sdAb), or a camelid antibody or binding fragment thereof.
11. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises a humanized antibody or binding fragment thereof, a chimeric antibody or binding fragment thereof, a monoclonal antibody or binding fragment thereof, or a bispecific antibody or binding fragment thereof.
12. The anti-CLDN18.2 antibody of claim 11, wherein the anti-CLDN18.2 antibody comprises a chimeric antibody or binding fragment thereof.
13. The anti-CLDN18.2 antibody of claim 12, wherein the chimeric antibody or binding fragment thereof comprises a VH region comprising at least 80%, 85%, 90%, 95%, or 100% sequence

- identity to SEQ ID NO: 45 and a VL region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to ID NOs: 46-50.
14. The anti-CLDN18.2 antibody of claim 12, wherein the chimeric antibody or binding fragment thereof comprises a VH region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to SEQ ID NO: 51 and a VL region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to SEQ ID NOs: 52-56.
 15. The anti-CLDN18.2 antibody of claim 11, wherein the anti-CLDN18.2 antibody comprises a humanized antibody or binding fragment thereof.
 16. The anti-CLDN18.2 antibody of claim 15, wherein the humanized antibody or binding fragment thereof comprises a VH region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to SEQ ID NOs: 74-76 and a VL region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to SEQ ID NOs: 77-80.
 17. The anti-CLDN18.2 antibody of claim 15, wherein the humanized antibody or binding fragment thereof comprises a VH region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to SEQ ID NOs: 81-84 and a VL region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to SEQ ID NOs: 85-88.
 18. The anti-CLDN18.2 antibody of claim 15, wherein the humanized antibody or binding fragment thereof comprises a VH region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to SEQ ID NOs: 89-92 and a VL region comprising at least 80%, 85%, 90%, 95%, or 100% sequence identity to SEQ ID NOs: 93-97.
 19. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises an IgM framework.
 20. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises an IgG2 framework.
 21. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises an IgG1 framework.

22. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises one or more mutations in the FC region.
23. The anti-CLDN18.2 antibody of claim 22, wherein the one or more mutations comprise a mutation at amino acid position S239, amino acid position I332, amino acid position F243, amino acid position R292, amino acid position Y300, amino acid position V305, amino acid position P396 or a combination thereof.
24. The anti-CLDN18.2 antibody of claim 22, wherein one or more mutations in the FC region confer enhanced ADCC to the reference antibody 175D10.
25. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody is further conjugated to a payload.
26. A nucleic acid polymer encoding an anti-CLDN18.2 antibody of claim 1.
27. A vector comprising a nucleic acid polymer of claim 26.
28. A pharmaceutical composition comprising:
 - an anti-CLDN18.2 antibody of claim 1; and
 - a pharmaceutically acceptable excipient.
29. The anti-CLDN18.2 antibody of claim 1 or the pharmaceutical composition of claim 28 for use in the treatment of cancer in a subject.
30. The anti-CLDN18.2 antibody or pharmaceutical composition for the use of claim 29, wherein the cancer is gastrointestinal cancer, lung cancer or ovarian cancer.
31. The anti-CLDN18.2 antibody or pharmaceutical composition for the use of claim 30, wherein the gastrointestinal cancer is any one of the following : a gastric cancer, a pancreatic cancer, an esophageal cancer and cholangiocarcinoma.

32. The anti-CLDN18.2 antibody or pharmaceutical composition for the use of claim 29, wherein an additional therapeutic agent is to be further administered to the subject.
33. Use of the anti-CLDN18.2 antibody of claim 1 or the pharmaceutical composition of claim 28 in the manufacture of a medicament for the treatment of cancer in a subject.
34. The use of claim 33, wherein the cancer is gastrointestinal cancer, lung cancer or ovarian cancer.
35. The use of claim 34, wherein the gastrointestinal cancer is any one of the following : a gastric cancer, a pancreatic cancer, an esophageal cancer and cholangiocarcinoma.
36. The use of claim 33, wherein an additional therapeutic agent is to be further administered to the subject.
37. The anti-CLDN18.2 antibody of claim 1 or the pharmaceutical composition of claim 28 for use in a medicament.
38. A kit comprising an anti-CLDN18.2 antibody of claim 1, a vector of claim 27, or a pharmaceutical composition of claim 28.