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
a CDR1 sequence consisting of SEQ ID NO: 7;
a CDR2 sequence consisting of SEQ ID NO: 8; and
a CDR3 sequence consisting of SEQ ID NO: 9;

wherein the VL region comprises:
a CDR1 sequence selected from SEQ ID NOs: 21 or 24-27;
a CDR2 sequence consisting of SEQ ID NO: 22; and
a CDR3 sequence consisting of SEQ ID NO: 23.

2. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody is a full-length antibody.

3. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody is an antigen binding fragment.

4. 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, or antigen binding fragment thereof.

5. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises a humanized antibody or antigen binding fragment thereof, a chimeric antibody or antigen binding fragment thereof, a monoclonal antibody or antigen binding fragment thereof, or a bispecific antibody or antigen binding fragment thereof.

6. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises a humanized antibody or antigen binding fragment thereof.

7. The anti-CLDN18.2 antibody of claim 6, wherein the humanized antibody or antigen 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.

8. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody comprises an IgM framework, or an IgG2 framework, or an IgG1 framework.

9. The anti-CLDN18.2 antibody of claim 8, wherein the anti-CLDN18.2 antibody comprises one or more mutations in the Fc region, 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, wherein the one or more mutations in the Fc region confer enhanced ADCC to the reference antibody 175D10.

10. The anti-CLDN18.2 antibody of claim 1, wherein the anti-CLDN18.2 antibody is further conjugated to a payload.

11. A nucleic acid encoding the anti-CLDN18.2 antibody of claim 1.

12. A vector comprising the nucleic acid of claim 11.

13. A pharmaceutical composition comprising:
the anti-CLDN18.2 antibody of claim 1; and
a pharmaceutically acceptable excipient.

14. The pharmaceutical composition of claim 13 for use in treating a subject having a cancer that is characterized with an overexpression of CLDN18.2 protein.

15. The pharmaceutical composition for the use of claim 14, wherein the cancer is a gastrointestinal cancer, or a gastric cancer, or a pancreatic cancer, or an esophageal cancer or cholangiocarcinoma, or lung cancer or ovarian cancer.

16. Use of the pharmaceutical composition of claim 13 in the manufacture of a medicament for treating cancer in a subject, wherein the subject has cancer that is characterized with an overexpression of CLDN18.2 protein.

17. The use of claim 16, wherein the cancer is a gastrointestinal cancer, or a pancreatic cancer, or an esophageal cancer or cholangiocarcinoma, or lung cancer or ovarian cancer.