Claims

[Claim 1] An isolated antibody that comprises:
a first heavy chain variable region comprising HVR-H1, HVR-H2 and HVR-H3 amino acid sequences of SEQ ID NOs: 113, 117, and 118, respectively;
a first light chain variable region comprising HVR-L1, HVR-L2 and HVR-L3 amino acid sequences of SEQ ID NOs: 119, 120, and 121, respectively;
a second heavy chain variable region comprising HVR-H1, HVR-H2 and HVR-H3 amino acid sequences of SEQ ID NOs: 122, 123, and 124, respectively; and
a second light chain variable region comprising HVR-L1, HVR-L2 and HVR-L3 amino acid sequences of SEQ ID NOs: 114, 115, and 116, respectively.

[Claim 2] An isolated antibody that comprises:
a first heavy chain variable region comprising an amino acid sequence selected from SEQ ID NOs: 85, 1, 33 and 84; and a first light chain variable region comprising an amino acid sequence selected from SEQ ID NOs: 87, 2, 43, 86 and 88;
a second heavy chain variable region comprising an amino acid sequence selected from SEQ ID NOs: 60 and 70; and a second light chain variable region comprising an amino acid sequence selected from SEQ ID NOs: 61 and 71.

[Claim 3] The antibody of claim 1 or 2, wherein the first heavy chain variable region is linked to a first CH1 domain shown in SEQ ID NO: 95, the first light chain variable region is linked to a first CL domain shown in SEQ ID NO: 63, the second heavy chain variable region is linked to a second CH1 domain shown in SEQ ID NO: 97, and the second light chain variable region is linked to a second CL domain shown in SEQ ID NO: 62.

[Claim 4] The antibody of any one of claims 1 to 3, wherein the antibody further comprises any one of the Fc region combinations selected from:
(1) a first Fc region shown in SEQ ID NO: 72 and a second Fc region shown in SEQ ID NO: 73;
(2) a first Fc region shown in SEQ ID NO: 74 and a second Fc region shown in SEQ ID NO: 75;
(3) a first Fc region shown in SEQ ID NO: 76 and a second Fc region

shown in SEQ ID NO: 77; and
(4) a first Fc region shown in SEQ ID NO: 78 and a second Fc region shown in SEQ ID NO: 79.

[Claim 5] The antibody of claim 4, wherein the first Fc region is in the same polypeptide chain with the first heavy chain variable region, and the second Fc region is in the same polypeptide chain with the second heavy chain variable region.

[Claim 6] An isolated antibody that comprises:
a first heavy chain comprising an amino acid sequence selected from SEQ ID NOs: 104, 105, 106, and 107 and a first light chain comprising an amino acid sequence shown in SEQ ID NO: 112;
a second heavy chain comprising an amino acid sequence selected from SEQ ID NOs: 108, 109, 110, and 111 and a second light chain comprising an amino acid sequence shown in SEQ ID NO: 98.

[Claim 7] An isolated nucleic acid encoding the antibody of any one of claims 1 to 6.

[Claim 8] A host cell comprising the nucleic acid of claim 7.

[Claim 9] A method of producing an antibody comprising culturing the host cell of claim 8 so that the antibody is produced.

[Claim 10] A pharmaceutical composition comprising the antibody of any one of claims 1 to 6, and a pharmaceutically acceptable carrier.

[Claim 11] The pharmaceutical composition of claim 10, which induces T-cell-dependent cytotoxicity.

[Claim 12] The composition of claim 10 or 11, which is a pharmaceutical composition used for treatment and/or prevention of cancer.

[Claim 13] The composition of any one of claims 10 to 12, which is a pharmaceutical composition used for treatment and/or prevention of ovarian cancer, non-small cell lung cancer, gastric cancer, or liver cancer.

[Claim 14] Use of the antibody of any one of claims 1 to 6 in the manufacture of a medicament.

[Claim 15] A method of treating an individual having cancer comprising administering to the individual an effective amount of the antibody of any one of claims 1 to 6.