CLAIMS

What is claimed is:

1. An antibody or antigen-binding fragment thereof which has specificity to the human 5T4 oncofetal trophoblast glycoprotein (5T4) protein and comprises a heavy chain variable region (VH) comprising a VH CDR1, a VH CDR2 and a VH CDR3, and a light chain variable region (VL) comprising a VL CDR1, a VL CDR2, and a VL CDR3, wherein the VH CDR1, VH CDR2, VH CDR3, VL CDR1, VL CDR2 and VL CDR3 comprise, respectively, the amino acid sequences of

SEQ ID NO: 41, 42 (or any one of 47-53), 43, 44, 45 and 46 (or 264 or 265);

SEQ ID NO: 123, 124 or 129, 125, 126, 127 and 128;

SEQ ID NO: 54, 55 (or any one of 60-63, or 266 or 267), 56, 57, 58 and 59;

SEQ ID NO: 64-69;

SEQ ID NO: 70, 71 (or 76), 72, 73, 74 and 75;

SEQ ID NO: 77-82;

SEQ ID NO: 83-88;

SEQ ID NO: 89-94;

SEQ ID NO: 95, 96 (or any one of 101-104), 97, 98, 99 and 100;

SEQ ID NO: 105-110;

SEQ ID NO: 111-116;

SEQ ID NO: 117-122;

SEQ ID NO: 130-135;

SEQ ID NO: 136-141;

SEQ ID NO: 142-147;

SEQ ID NO: 148-153;

SEQ ID NO: 154-159;

SEQ ID NO: 160, 161 or 166, 162, 163, 164 and 165;

SEQ ID NO: 167, 168 or 173, 169, 170, 171 and 172; or

SEQ ID NO: 174, 175 or 180, 176, 177, 178 and 179.

2. The antibody or antigen-binding fragment thereof of claim 1, wherein:

(i) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 41;

the VH CDR2 comprises the amino acid sequence of SEQ ID NO: 42;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 43;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 44;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 45; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 46;

(ii) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 123;

the VH CDR2 comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 124 and 129;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 125;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 126;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 127; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 128;

(iii) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 54;

the VH CDR2 comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 55, 60-63 and 266-267;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 56;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 57;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 58; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 59;

(iv) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 41;

the VH CDR2 comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 42 and 47-53;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 43;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 44;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 45; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 46, 264 or 265;

(v) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 41;

the VH CDR2 comprises the amino acid sequence of SEQ ID NO: 42;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 43;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 44;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 45; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 264 or 265;

(vi) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 70;

the VH CDR2 comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 71 and 76;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 72;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 73;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 74; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 75;

(vii) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 95;

the VH CDR2 comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 96 and 101-104;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 97;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 98;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 99; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 100;

(viii) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 117;

the VH CDR2 comprises the amino acid sequence of SEQ ID NO: 118;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 119;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 120;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 121; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 122; or

(ix) the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 154;

the VH CDR2 comprises the amino acid sequence of SEQ ID NO: 155;

the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 156;

the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 157;

the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 158; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 159.

3. The antibody or antigen-binding fragment thereof of claim 1 or 2, wherein

(i) the VH comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 1, 181-184, 189-192, and 195-204, and the VL comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 2, 185-188, 193-194, 205-214 and 262-263;

(ii) the VH comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 3, 215-221 and 248-256, and the VL comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 4 and 222-226;

(iii) the VH comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 23, 236-241 and 259-261, and the VL comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 24 and 242-247;

(iv) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 262 or 263;

(v) the VH comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 7, 227-229, and 257, and the VL comprises an amino acid sequence selected from the group consisting of SEQ ID NO: 8, 230-235 and 258;

(vi) the VH comprises the amino acid sequence of SEQ ID NO: 15, and the VL comprises an amino acid sequence of SEQ ID NO: 16;

(vii) the VH comprises the amino acid sequence of SEQ ID NO: 21, and the VL comprises an amino acid sequence of SEQ ID NO: 22; or

(viii) the VH comprises the amino acid sequence of SEQ ID NO: 33, and the VL comprises an amino acid sequence of SEQ ID NO: 34.

4. The antibody or antigen-binding fragment thereof of claim 3, wherein

(a1) the VH comprises the amino acid sequence of SEQ ID NO: 1, and the VL comprises the amino acid sequence of SEQ ID NO: 2;

(a2) the VH comprises the amino acid sequence of SEQ ID NO: 181, and the VL comprises the amino acid sequence of SEQ ID NO: 185;

(a3) the VH comprises the amino acid sequence of SEQ ID NO: 181, and the VL comprises the amino acid sequence of SEQ ID NO: 186;

(a4) the VH comprises the amino acid sequence of SEQ ID NO: 181, and the VL comprises the amino acid sequence of SEQ ID NO: 187;(a5) the VH comprises the amino acid

sequence of SEQ ID NO: 181, and the VL comprises the amino acid sequence of SEQ ID NO: 188;(a6) the VH comprises the amino acid sequence of SEQ ID NO: 182, and the VL comprises the amino acid sequence of SEQ ID NO: 185;

(a7) the VH comprises the amino acid sequence of SEQ ID NO: 182, and the VL comprises the amino acid sequence of SEQ ID NO: 186;(a8) the VH comprises the amino acid sequence of SEQ ID NO: 182, and the VL comprises the amino acid sequence of SEQ ID NO: 187;

(a9) the VH comprises the amino acid sequence of SEQ ID NO: 182, and the VL comprises the amino acid sequence of SEQ ID NO: 188;

(a10) the VH comprises the amino acid sequence of SEQ ID NO: 183, and the VL comprises the amino acid sequence of SEQ ID NO: 185;

(a11) the VH comprises the amino acid sequence of SEQ ID NO: 183, and the VL comprises the amino acid sequence of SEQ ID NO: 186;

(a12) the VH comprises the amino acid sequence of SEQ ID NO: 183, and the VL comprises the amino acid sequence of SEQ ID NO: 187;

(a13) the VH comprises the amino acid sequence of SEQ ID NO: 183, and the VL comprises the amino acid sequence of SEQ ID NO: 188;

(a14) the VH comprises the amino acid sequence of SEQ ID NO: 184, and the VL comprises the amino acid sequence of SEQ ID NO: 185;

(a15) the VH comprises the amino acid sequence of SEQ ID NO: 184, and the VL comprises the amino acid sequence of SEQ ID NO: 186;

(a16) the VH comprises the amino acid sequence of SEQ ID NO: 184, and the VL comprises the amino acid sequence of SEQ ID NO: 187;

(a17) the VH comprises the amino acid sequence of SEQ ID NO: 184, and the VL comprises the amino acid sequence of SEQ ID NO: 188;

(a18) the VH comprises the amino acid sequence of SEQ ID NO: 190, and the VL comprises the amino acid sequence of SEQ ID NO: 193;

(a19) the VH comprises the amino acid sequence of SEQ ID NO: 190, and the VL comprises the amino acid sequence of SEQ ID NO: 194;

(a20) the VH comprises the amino acid sequence of SEQ ID NO: 191, and the VL comprises the amino acid sequence of SEQ ID NO: 193;

(a21) the VH comprises the amino acid sequence of SEQ ID NO: 191, and the VL comprises the amino acid sequence of SEQ ID NO: 194;

(a22) the VH comprises the amino acid sequence of SEQ ID NO: 192, and the VL comprises the amino acid sequence of SEQ ID NO: 193;

(a23) the VH comprises the amino acid sequence of SEQ ID NO: 192, and the VL comprises the amino acid sequence of SEQ ID NO: 194;

(a24) the VH comprises the amino acid sequence of SEQ ID NO: 195, and the VL comprises the amino acid sequence of SEQ ID NO: 205;

(a25) the VH comprises the amino acid sequence of SEQ ID NO: 195, and the VL comprises the amino acid sequence of SEQ ID NO: 207;

(a26) the VH comprises the amino acid sequence of SEQ ID NO: 195, and the VL comprises the amino acid sequence of SEQ ID NO: 209;

(a27) the VH comprises the amino acid sequence of SEQ ID NO: 195, and the VL comprises the amino acid sequence of SEQ ID NO: 211;

(a28) the VH comprises the amino acid sequence of SEQ ID NO: 195, and the VL comprises the amino acid sequence of SEQ ID NO: 213;

(a29) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 205;

(a30) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 207;

(a31) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 209;

(a32) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 211;

(a33) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 213;

(a34) the VH comprises the amino acid sequence of SEQ ID NO: 199, and the VL comprises the amino acid sequence of SEQ ID NO: 205;

(a35) the VH comprises the amino acid sequence of SEQ ID NO: 199, and the VL comprises the amino acid sequence of SEQ ID NO: 207;

(a36) the VH comprises the amino acid sequence of SEQ ID NO: 199, and the VL comprises the amino acid sequence of SEQ ID NO: 209;

(a37) the VH comprises the amino acid sequence of SEQ ID NO: 199, and the VL comprises the amino acid sequence of SEQ ID NO: 211;

(a38) the VH comprises the amino acid sequence of SEQ ID NO: 199, and the VL comprises the amino acid sequence of SEQ ID NO: 213;

(a39) the VH comprises the amino acid sequence of SEQ ID NO: 201, and the VL comprises the amino acid sequence of SEQ ID NO: 205;

(a40) the VH comprises the amino acid sequence of SEQ ID NO: 201, and the VL comprises the amino acid sequence of SEQ ID NO: 207;

(a41) the VH comprises the amino acid sequence of SEQ ID NO: 201, and the VL comprises the amino acid sequence of SEQ ID NO: 209;

(a42) the VH comprises the amino acid sequence of SEQ ID NO: 201, and the VL comprises the amino acid sequence of SEQ ID NO: 211;

(a43) the VH comprises the amino acid sequence of SEQ ID NO: 201, and the VL comprises the amino acid sequence of SEQ ID NO: 213;

(a44) the VH comprises the amino acid sequence of SEQ ID NO: 203, and the VL comprises the amino acid sequence of SEQ ID NO: 205;

(a45) the VH comprises the amino acid sequence of SEQ ID NO: 203, and the VL comprises the amino acid sequence of SEQ ID NO: 207;

(a46) the VH comprises the amino acid sequence of SEQ ID NO: 203, and the VL comprises the amino acid sequence of SEQ ID NO: 209;

(a47) the VH comprises the amino acid sequence of SEQ ID NO: 203, and the VL comprises the amino acid sequence of SEQ ID NO: 211;

(a48) the VH comprises the amino acid sequence of SEQ ID NO: 203, and the VL comprises the amino acid sequence of SEQ ID NO: 213;

(a49) the VH comprises the amino acid sequence of SEQ ID NO: 3, and the VL comprises the amino acid sequence of SEQ ID NO: 4;

(a50) the VH comprises the amino acid sequence of SEQ ID NO: 216, and the VL comprises the amino acid sequence of SEQ ID NO: 222;

(a51) the VH comprises the amino acid sequence of SEQ ID NO: 217, and the VL comprises the amino acid sequence of SEQ ID NO: 222;

(a52) the VH comprises the amino acid sequence of SEQ ID NO: 218, and the VL comprises the amino acid sequence of SEQ ID NO: 222;

(a53) the VH comprises the amino acid sequence of SEQ ID NO: 219, and the VL comprises the amino acid sequence of SEQ ID NO: 222;

(a54) the VH comprises the amino acid sequence of SEQ ID NO: 220, and the VL comprises the amino acid sequence of SEQ ID NO: 222;

(a55) the VH comprises the amino acid sequence of SEQ ID NO: 221, and the VL comprises the amino acid sequence of SEQ ID NO: 222;

(a56) the VH comprises the amino acid sequence of SEQ ID NO: 216, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a57) the VH comprises the amino acid sequence of SEQ ID NO: 217, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a58) the VH comprises the amino acid sequence of SEQ ID NO: 218, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a59) the VH comprises the amino acid sequence of SEQ ID NO: 219, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a60) the VH comprises the amino acid sequence of SEQ ID NO: 220, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a61) the VH comprises the amino acid sequence of SEQ ID NO: 221, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a62) the VH comprises the amino acid sequence of SEQ ID NO: 216, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a63) the VH comprises the amino acid sequence of SEQ ID NO: 217, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a64) the VH comprises the amino acid sequence of SEQ ID NO: 218, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a65) the VH comprises the amino acid sequence of SEQ ID NO: 219, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a66) the VH comprises the amino acid sequence of SEQ ID NO: 220, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a67) the VH comprises the amino acid sequence of SEQ ID NO: 221, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a68) the VH comprises the amino acid sequence of SEQ ID NO: 216, and the VL comprises the amino acid sequence of SEQ ID NO: 225;

(a69) the VH comprises the amino acid sequence of SEQ ID NO: 217, and the VL comprises the amino acid sequence of SEQ ID NO: 225;

(a70) the VH comprises the amino acid sequence of SEQ ID NO: 218, and the VL comprises the amino acid sequence of SEQ ID NO: 225;

(a71) the VH comprises the amino acid sequence of SEQ ID NO: 219, and the VL comprises the amino acid sequence of SEQ ID NO: 225;

(a72) the VH comprises the amino acid sequence of SEQ ID NO: 220, and the VL comprises the amino acid sequence of SEQ ID NO: 225;

(a73) the VH comprises the amino acid sequence of SEQ ID NO: 221, and the VL comprises the amino acid sequence of SEQ ID NO: 225;

(a74) the VH comprises the amino acid sequence of SEQ ID NO: 216, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a75) the VH comprises the amino acid sequence of SEQ ID NO: 217, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a76) the VH comprises the amino acid sequence of SEQ ID NO: 218, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a77) the VH comprises the amino acid sequence of SEQ ID NO: 219, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a78) the VH comprises the amino acid sequence of SEQ ID NO: 220, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a79) the VH comprises the amino acid sequence of SEQ ID NO: 221, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a80) the VH comprises the amino acid sequence of SEQ ID NO: 7, and the VL comprises the amino acid sequence of SEQ ID NO: 8;

(a81) the VH comprises the amino acid sequence of SEQ ID NO: 227, and the VL comprises the amino acid sequence of SEQ ID NO: 8;

(a82) the VH comprises the amino acid sequence of SEQ ID NO: 228, and the VL comprises the amino acid sequence of SEQ ID NO: 230;

(a83) the VH comprises the amino acid sequence of SEQ ID NO: 228, and the VL comprises the amino acid sequence of SEQ ID NO: 231;

(a84) the VH comprises the amino acid sequence of SEQ ID NO: 228, and the VL comprises the amino acid sequence of SEQ ID NO: 232;

(a85) the VH comprises the amino acid sequence of SEQ ID NO: 228, and the VL comprises the amino acid sequence of SEQ ID NO: 233;

(a86) the VH comprises the amino acid sequence of SEQ ID NO: 228, and the VL comprises the amino acid sequence of SEQ ID NO: 234;

(a87) the VH comprises the amino acid sequence of SEQ ID NO: 228, and the VL comprises the amino acid sequence of SEQ ID NO: 235;

(a88) the VH comprises the amino acid sequence of SEQ ID NO: 229, and the VL comprises the amino acid sequence of SEQ ID NO: 230;

(a89) the VH comprises the amino acid sequence of SEQ ID NO: 229, and the VL comprises the amino acid sequence of SEQ ID NO: 231;

(a90) the VH comprises the amino acid sequence of SEQ ID NO: 229, and the VL comprises the amino acid sequence of SEQ ID NO: 232;

(a91) the VH comprises the amino acid sequence of SEQ ID NO: 229, and the VL comprises the amino acid sequence of SEQ ID NO: 233;

(a92) the VH comprises the amino acid sequence of SEQ ID NO: 229, and the VL comprises the amino acid sequence of SEQ ID NO: 234;

(a93) the VH comprises the amino acid sequence of SEQ ID NO: 229, and the VL comprises the amino acid sequence of SEQ ID NO: 235;

(a100) the VH comprises the amino acid sequence of SEQ ID NO: 23, and the VL comprises the amino acid sequence of SEQ ID NO: 24;

(a101) the VH comprises the amino acid sequence of SEQ ID NO: 236, and the VL comprises the amino acid sequence of SEQ ID NO: 24;

(a102) the VH comprises the amino acid sequence of SEQ ID NO: 238, and the VL comprises the amino acid sequence of SEQ ID NO: 243;

(a103) the VH comprises the amino acid sequence of SEQ ID NO: 238, and the VL comprises the amino acid sequence of SEQ ID NO: 244;

(a104) the VH comprises the amino acid sequence of SEQ ID NO: 238, and the VL comprises the amino acid sequence of SEQ ID NO: 245;

(a105) the VH comprises the amino acid sequence of SEQ ID NO: 238, and the VL comprises the amino acid sequence of SEQ ID NO: 246;

(a106) the VH comprises the amino acid sequence of SEQ ID NO: 238, and the VL comprises the amino acid sequence of SEQ ID NO: 247;

(a107) the VH comprises the amino acid sequence of SEQ ID NO: 239, and the VL comprises the amino acid sequence of SEQ ID NO: 243;

(a108) the VH comprises the amino acid sequence of SEQ ID NO: 239, and the VL comprises the amino acid sequence of SEQ ID NO: 244;

(a109) the VH comprises the amino acid sequence of SEQ ID NO: 239, and the VL comprises the amino acid sequence of SEQ ID NO: 245;

(a110) the VH comprises the amino acid sequence of SEQ ID NO: 239, and the VL comprises the amino acid sequence of SEQ ID NO: 246;

(a111) the VH comprises the amino acid sequence of SEQ ID NO: 239, and the VL comprises the amino acid sequence of SEQ ID NO: 247;

(a112) the VH comprises the amino acid sequence of SEQ ID NO: 240, and the VL comprises the amino acid sequence of SEQ ID NO: 243;

(a113) the VH comprises the amino acid sequence of SEQ ID NO: 240, and the VL comprises the amino acid sequence of SEQ ID NO: 244;

(a114) the VH comprises the amino acid sequence of SEQ ID NO: 240, and the VL comprises the amino acid sequence of SEQ ID NO: 245;

(a115) the VH comprises the amino acid sequence of SEQ ID NO: 240, and the VL comprises the amino acid sequence of SEQ ID NO: 246;

(a116) the VH comprises the amino acid sequence of SEQ ID NO: 240, and the VL comprises the amino acid sequence of SEQ ID NO: 247;

(a117) the VH comprises the amino acid sequence of SEQ ID NO: 241, and the VL comprises the amino acid sequence of SEQ ID NO: 243;

(a118) the VH comprises the amino acid sequence of SEQ ID NO: 241, and the VL comprises the amino acid sequence of SEQ ID NO: 244;

(a119) the VH comprises the amino acid sequence of SEQ ID NO: 241, and the VL comprises the amino acid sequence of SEQ ID NO: 245;

(a120) the VH comprises the amino acid sequence of SEQ ID NO: 241, and the VL comprises the amino acid sequence of SEQ ID NO: 246;

(a121) the VH comprises the amino acid sequence of SEQ ID NO: 241, and the VL comprises the amino acid sequence of SEQ ID NO: 247;

(a122) the VH comprises the amino acid sequence of SEQ ID NO: 221, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a123) the VH comprises the amino acid sequence of SEQ ID NO: 254, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a124) the VH comprises the amino acid sequence of SEQ ID NO: 255, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a125) the VH comprises the amino acid sequence of SEQ ID NO: 256, and the VL comprises the amino acid sequence of SEQ ID NO: 223;

(a126) the VH comprises the amino acid sequence of SEQ ID NO: 220, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a127) the VH comprises the amino acid sequence of SEQ ID NO: 251, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a128) the VH comprises the amino acid sequence of SEQ ID NO: 252, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a129) the VH comprises the amino acid sequence of SEQ ID NO: 253, and the VL comprises the amino acid sequence of SEQ ID NO: 224;

(a130) the VH comprises the amino acid sequence of SEQ ID NO: 219, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a131) the VH comprises the amino acid sequence of SEQ ID NO: 248, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a132) the VH comprises the amino acid sequence of SEQ ID NO: 249, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a133) the VH comprises the amino acid sequence of SEQ ID NO: 250, and the VL comprises the amino acid sequence of SEQ ID NO: 226;

(a134) the VH comprises the amino acid sequence of SEQ ID NO: 257, and the VL comprises the amino acid sequence of SEQ ID NO: 258;

(a135) the VH comprises the amino acid sequence of SEQ ID NO: 238, and the VL comprises the amino acid sequence of SEQ ID NO: 245;

(a136) the VH comprises the amino acid sequence of SEQ ID NO: 238, and the VL comprises the amino acid sequence of SEQ ID NO: 247;

(a137) the VH comprises the amino acid sequence of SEQ ID NO: 259, and the VL comprises the amino acid sequence of SEQ ID NO: 245;

(a138) the VH comprises the amino acid sequence of SEQ ID NO: 259, and the VL comprises the amino acid sequence of SEQ ID NO: 247;

(a139) the VH comprises the amino acid sequence of SEQ ID NO: 239, and the VL comprises the amino acid sequence of SEQ ID NO: 245;

(a140) the VH comprises the amino acid sequence of SEQ ID NO: 260, and the VL comprises the amino acid sequence of SEQ ID NO: 245;

(a141) the VH comprises the amino acid sequence of SEQ ID NO: 240, and the VL comprises the amino acid sequence of SEQ ID NO: 247;

(a142) the VH comprises the amino acid sequence of SEQ ID NO: 261, and the VL comprises the amino acid sequence of SEQ ID NO: 247;

(a143) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 262; or

(a144) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 263.

5. The antibody or antigen-binding fragment thereof of claim 4, wherein

(i) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 205;

(ii) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 262; or

(iii) the VH comprises the amino acid sequence of SEQ ID NO: 197, and the VL comprises the amino acid sequence of SEQ ID NO: 263.

6. The antibody or antigen-binding fragment thereof of any one of claims 1-5, wherein the antibody or fragment thereof is a bivalent Fab antibody, or a fragment selected from the group consisting of F(ab')2, F(ab)2, Fab', Fab, Fv, and scFv.

7. An antibody-drug conjugate comprising an antibody or antigen-binding fragment thereof of any one of claims 1-6 conjugated to a drug moiety.

8. The antibody-drug conjugate of claim 7, wherein the drug moiety is a cytotoxic or cytostatic agent.

9. The antibody-drug conjugate of claim 8, wherein the drug moiety is a maytansinoid, an auristatin, or a macrocyclic ketone analogue.

10. The antibody-drug conjugate of claim 9, wherein the drug moiety comprises monomethyl auristatin E (MMAE) or monomethyl auristatin F (MMAF).

11. The antibody-drug conjugate of any one of claims 7-10, wherein the drug moiety is attached to the antibody or antigen-binding fragment thereof through a linker that is hydrolyzable under acidic conditions.

12. The antibody-drug conjugate of any one of claims 7-11, wherein:
the VH CDR1 comprises the amino acid sequence of SEQ ID NO: 41;
the VH CDR2 comprises the amino acid sequence of SEQ ID NO: 42;
the VH CDR3 comprises the amino acid sequence of SEQ ID NO: 43;
the VL CDR1 comprises the amino acid sequence of SEQ ID NO: 44;
the VL CDR2 comprises the amino acid sequence of SEQ ID NO: 45; and

the VL CDR3 comprises the amino acid sequence of SEQ ID NO: 264 or 265.

13. A multispecific antibody comprising an antigen-binding fragment of any one of claims 1-6 and one or more antibody or antigen-binding fragment having binding specificity to a target antigen that is not 5T4.

14. A chimeric antigen receptor (CAR) comprising an antigen-binding fragment of any one of claims 1-6, a transmembrane domain, a costimulatory domain, and a CD3ξ intracellular domain.

15. One or more polynucleotide(s) encoding the antibody or antigen-binding fragment thereof of any one of claims 1-6, the multispecific antibody of claim 13, or the CAR of claim 14.

16. The polynucleotide(s) of claim 15, which is one or more mRNA.

17. The polynucleotide(s) of claim 16, wherein the mRNA is chemically modified.

18. A cell comprising the polynucleotide(s) of any one of claims 15-17.

19. A composition comprising the antibody or antigen-binding fragment thereof of any one of claims 1-6, the antibody-drug conjugate of any one claims 7-12, the multispecific antibody of claim 13, the CAR of claim 14, the polynucleotide(s) of any one of claims 15-17, or the cell of claim 18, and a pharmaceutically acceptable carrier.

20. Use of the antibody or antigen-binding fragment thereof of any one of claims 1-6, the antibody-drug conjugate of any one claims 7-12, the multispecific antibody of claim 13, the CAR of claim 14, the polynucleotide(s) of any one of claims 15-17, or the cell of claim 18 for the preparation of a medicament for treating cancer.