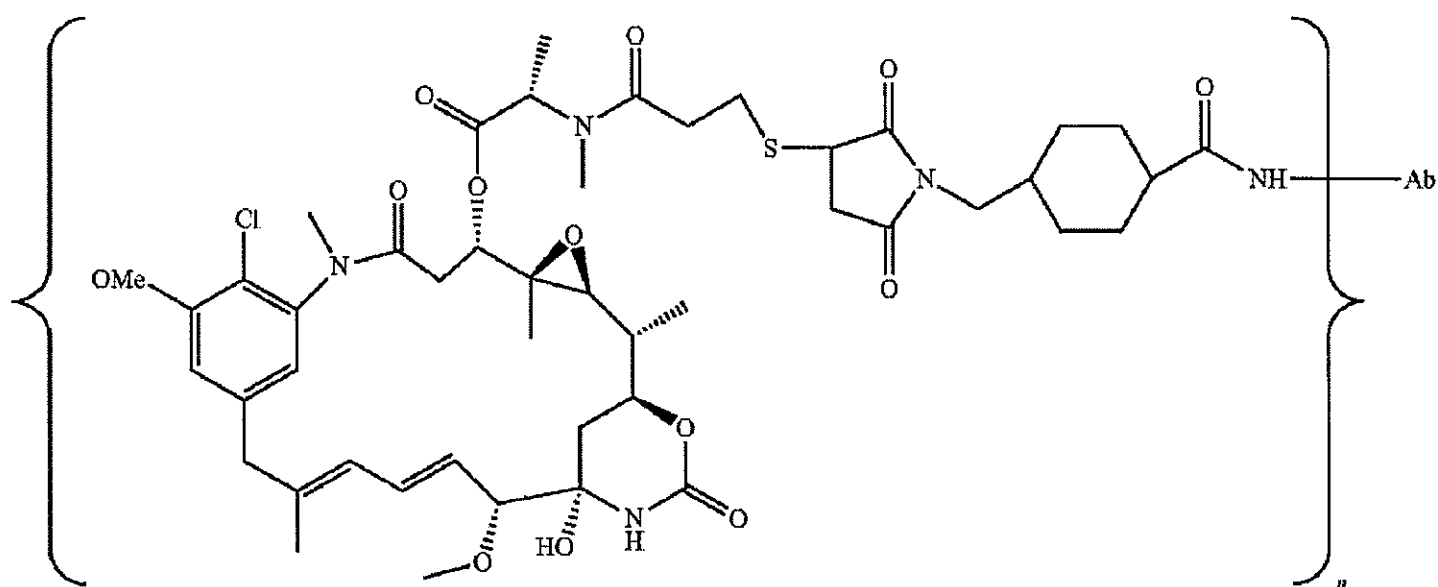


Claims

1. An antibody or antigen binding fragment thereof that binds P-cadherin comprising:
 - a. a heavy chain variable region (VH) that comprises a VH CDR1 of SEQ ID NO: 1, a VH CDR2 of SEQ ID NO: 2, and a VH CDR3 of SEQ ID NO: 3, wherein the CDR is defined in accordance with the Kabat definition; and a light chain variable region (VL) that comprises a VL CDR1 of SEQ ID NO: 11, a VL CDR2 of SEQ ID NO: 12, and a VL CDR3 of SEQ ID NO: 13, wherein the CDR is defined in accordance with the Kabat definition.
2. An antibody or antigen binding fragment thereof that binds P-cadherin comprising:
 - a. A heavy chain variable region (VH) comprising the amino acid sequence of SEQ ID NO: 7, and a light chain variable region (VL) comprising the amino acid sequence of SEQ ID NO: 17.
3. An antibody or antigen binding fragment thereof that binds P-cadherin comprising:
 - a. A heavy chain comprising the amino acid sequence of SEQ ID NO: 9, and a light chain comprising the amino acid sequence of SEQ ID NO: 19.
4. An antibody drug conjugate comprising the formula
$$\text{Ab-(L-(D)}_m)_n$$
or a pharmaceutically acceptable salt thereof; wherein
Ab is an antibody or antigen binding fragment thereof according to claim 1;
L is a linker;
D is a drug moiety;
m is an integer from 1 to 8; and
n is an integer from 1 to 10.
5. The antibody drug conjugate of claim 4, wherein said m is 1.
6. The antibody drug conjugate of claim 4, wherein said n is 3 or 4.
7. The antibody drug conjugate of claim 4, wherein the antibody or antigen binding fragment thereof (Ab) comprises a VH region comprising the amino acid sequence of SEQ ID NO: 7 and a VL region comprising the amino acid sequence of SEQ ID NO: 17.
8. The antibody drug conjugate of claim 4, wherein said antibody or antigen binding fragment thereof comprises a heavy chain of SEQ ID NO: 9 and a light chain of SEQ ID NO: 19.
9. The antibody drug conjugate of claim 4, wherein said linker (L) is derived from cross-linking reagents selected from the group consisting of N-succinimidyl 4-(maleimidomethyl) cyclohexanecarboxylate (SMCC), N-succinimidyl 4-(2-pyridyldithio)butanoate (SPDB), and 2,5-dioxopyrrolidin-1-yl 17-(2,5-dioxo-2,5-dihydro-1H-pyrrol-1-yl)-5,8,11,14-tetraoxo-4,7,10,13-tetraazaheptadecan-1-oate (CX1-1).

10. The antibody drug conjugate of claim 4, wherein the drug moiety (D) is a maytansinoid.
11. The antibody drug conjugate of claim 10, wherein the maytansinoid is N(2')-deacetyl-N(2')-(3-mercapto-1-oxo-propyl)-maytansine (DM1) or N(2')-deacetyl-N2-(4-mercapto-4-methyl-1-oxopentyl)-maytansine (DM4).
12. The antibody drug conjugate of claim 4 comprising the following formula:



wherein Ab is an antibody or antigen binding fragment thereof that binds P-cadherin comprising a VH CDR1 of SEQ ID NO: 1, a VH CDR2 of SEQ ID NO: 2, and a VH CDR3 of SEQ ID NO: 3, and a VL CDR1 of SEQ ID NO: 11, a VL CDR2 of SEQ ID NO: 12, and a VL CDR3 of SEQ ID NO: 13, wherein the CDR is defined in accordance with the Kabat definition; and n is an integer from 1 to 10; or a pharmaceutically acceptable salt thereof.

13. A pharmaceutical composition comprising the antibody, or antigen binding fragment thereof, of claim 1 and a pharmaceutically acceptable carrier.
14. A pharmaceutical composition comprising the antibody drug conjugate of claim 4 and a pharmaceutically acceptable carrier.
15. The pharmaceutical composition of claim 14 wherein said composition is prepared as a lyophilisate.
16. The pharmaceutical composition of claim 15 wherein said lyophilisate comprises the antibody drug conjugate, histidine, sucrose, and polysorbate 20.
17. The pharmaceutical composition of claim 16 wherein the composition comprises about 10 mg/mL of the antibody drug conjugate, 20 mM histidine, 240 mM sucrose, and 0.02% polysorbate 20.

18. The antibody or antigen binding fragment of claim 1, wherein said antibody is a human or humanized antibody.
19. The antibody or antigen binding fragment of claim 1, wherein said antibody is a monoclonal antibody.
20. The antibody or antigen binding fragment of claim 1, wherein said antibody or antigen binding fragment is a single chain antibody (scFv).
21. A diagnostic reagent comprising the antibody or antigen binding fragment thereof according to claim 1.
22. The diagnostic reagent of claim 21, wherein the antibody or antigen binding fragment thereof is a labelled with a radiolabel, a fluorophore, a chromophore, an imaging agent, or a metal ion.