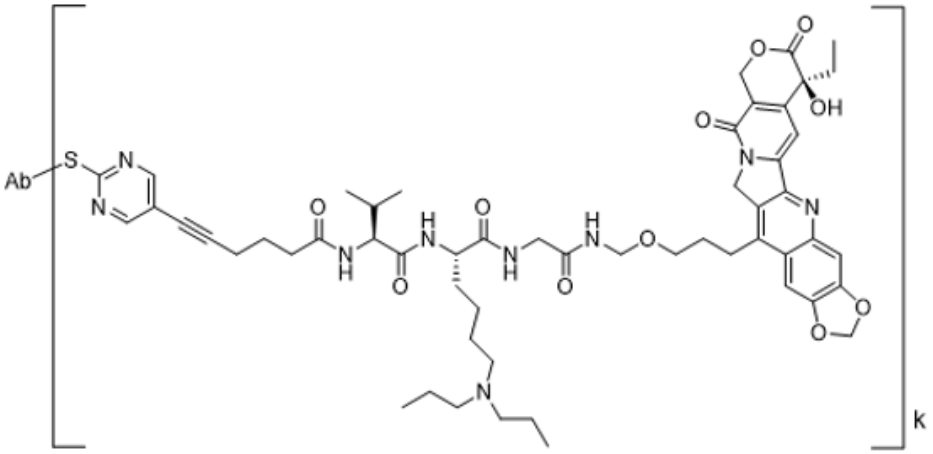
Claims

1. An antibody-drug conjugate, a prodrug, pharmaceutically acceptable salt, or solvate thereof, or a solvate of the pharmaceutically acceptable salt, characterized in that the antibody-drug conjugate has a structure represented by formula (A-1):



(A-1)

wherein

Ab represents an antibody or an antigen-binding fragment selectively binding to or recognizing PDL1;

and

k represents any numerical value between 0.1 and 10.0.

2. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to claim 1, characterized in that the antigen-binding fragment is selected from a full-length immunoglobulin, a single-chain Fv (scFv) fragment, an Fab fragment, an Fab' fragment, $F(ab')_2$, an Fv fragment, a disulfide-stabilized Fv fragment (dsFv), $(dsFv)_2$, an Fv-Fc fusion, an scFv-Fc fusion, an scFv-Fv fusion, a diabody, a tribody, a tetrabody, or any combination thereof.

3. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to claim 1 or 2, characterized in that the Ab is a humanized antibody or an antigen-binding fragment thereof.

4. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of the preceding claims, characterized in that the Ab comprises a heavy chain variable region

(VH) and a light chain variable region (VL), wherein the heavy chain variable region (VH) comprises heavy chain complementarity determining region 1 (HCDR1), heavy chain complementarity determining region 2 (HCDR2), and heavy chain complementarity determining region 3 (HCDR3) contained in SEQ ID NO: 7, and the light chain variable region (VL) comprises light chain complementarity determining region 1 (LCDR1), light chain complementarity determining region 2 (LCDR2), and light chain complementarity determining region 3 (LCDR3) contained in SEQ ID NO: 8.

5. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to claim 4, characterized in that the amino acid sequence of HCDR1 is SEQ ID NO: 1, the amino acid sequence of HCDR2 is SEQ ID NO: 2, and the amino acid sequence of HCDR3 is SEQ ID NO: 3; and the amino acid sequence of LCDR1 is SEQ ID NO: 4, the amino acid sequence of LCDR2 is SEQ ID NO: 5, and the amino acid sequence of LCDR3 is SEQ ID NO: 6.

6. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of the preceding claims, characterized in that the Ab comprises an Fc sequence of human IgG selected from a group consisting of IgG1, IgG2, IgG3, and IgG4.

7. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of the preceding claims, characterized in that the Ab comprises a heavy chain variable region (VH), and the amino acid sequence of the heavy chain variable region (VH) has at least 70%, at least 80%, at least 90%, at least 95%, at least 99%, or 100% identity to SEQ ID NO: 7, and/or the Ab comprises a light chain variable region (VL), and the amino acid sequence of the light chain variable region (VL) has at least 70%, at least 80%, at least 90%, at least 95%, at least 99%, or 100% identity to SEQ ID NO: 8.

8. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of the preceding claims, characterized in that the Ab comprises a heavy chain (HC), and the amino acid sequence of the heavy chain (HC) has at least 70%, at least 80%, at least 90%, at least 95%, at least 99%, or 100% identity to SEQ ID NO: 9, and/or the Ab comprises a light

chain (LC), and the amino acid sequence of the light chain (LC) has at least 70%, at least 80%, at least 90%, at least 95%, at least 99%, or 100% identity to SEQ ID NO: 10.

9. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of the preceding claims, characterized in that the Ab is a multispecific antibody.

10. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of the preceding claims, characterized in that the Ab is an afucosylated antibody.

11. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of claims 6-10, characterized in that the Fc region comprises a C-terminal lysine or a deletion of the C-terminal lysine.

12. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of the preceding claims, characterized in that k is about 4.0 to about 8.0, preferably k is about 4.0, about 6.0, or about 8.0.

13. A pharmaceutical composition, characterized by comprising the antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of claims 1-12, and optionally, a pharmaceutically acceptable carrier, diluent, or excipient.

14. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of claims 1-12 or the pharmaceutical composition according to claim 13, for use as a drug.

15. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of claims 1-12 or the pharmaceutical composition according to claim 13, for use in the

treatment or prevention of a tumor or cancer, optionally the tumor or cancer is a tumor or cancer related to PDL1 expression.

16. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt, or the pharmaceutical composition for use in the treatment or prevention of a tumor or cancer according to claim 15, characterized in that the tumor or cancer is selected from melanoma, lung cancer, head and neck cancer, breast cancer, ovarian cancer, urothelial cancer, hepatocellular carcinoma (HCC), gastric cancer, cervical cancer, colon cancer, rectal cancer, colorectal cancer, bladder cancer, esophageal cancer, kidney cancer, prostate cancer, pancreatic cancer, and glioma.

17. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt, or the pharmaceutical composition for use in the treatment or prevention of a tumor or cancer according to claim 16, characterized in that the lung cancer is non-small cell lung cancer (NSCLC) or small cell lung cancer (SCLC).

18. The antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt, or the pharmaceutical composition for use in the treatment or prevention of a tumor or cancer according to claim 16, characterized in that the breast cancer is triple negative breast cancer (TNBC).

19. An article of manufacture or kit, characterized by comprising the antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of claims 1-12 or the pharmaceutical composition according to claim 13, and instructions for use.

20. Use of the antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to any one of claims 1-12 or the pharmaceutical composition according to claim 13 in the preparation of a medicament for use in the prevention or treatment of a tumor or cancer.

21. Use of the antibody-drug conjugate, the prodrug, pharmaceutically acceptable salt, or solvate thereof, or the solvate of the pharmaceutically acceptable salt according to

any one of claims 1-12 or the pharmaceutical composition according to claim 13 in combination with an additional therapeutic agent in the preparation of a medicament for use in the prevention or treatment of a tumor or cancer.

22. The use according to claim 20 or 21, characterized in that the tumor or cancer is a tumor or cancer related to PDL1 expression.

23. The use according to claim 22, characterized in that the tumor or cancer related to PDL1 expression is selected from melanoma, lung cancer, head and neck cancer, breast cancer, ovarian cancer, urothelial cancer, hepatocellular carcinoma (HCC), gastric cancer, cervical cancer, colon cancer, rectal cancer, colorectal cancer, bladder cancer, esophageal cancer, kidney cancer, prostate cancer, pancreatic cancer, and glioma.

24. The use according to claim 23, characterized in that the lung cancer is non-small cell lung cancer (NSCLC) or small cell lung cancer (SCLC).

25. The use according to claim 23, characterized in that the breast cancer is triple negative breast cancer (TNBC).

26. The use according to any one of claims 21-25, characterized in that the additional therapeutic agent is selected from an anti-tumor agent, a chemotherapeutic agent, a growth inhibitor, and a cytotoxic agent.