

WHAT IS CLAIMED IS:

1. A bispecific antibody or antigen-binding portion thereof comprising at least one of polypeptide chain, wherein the polypeptide chain comprising:

a binding domain binding to a cell surface protein, wherein the binding domain binds programmed cell death protein 1 ligand (PD-L1), and the binding domain comprises:

a heavy chain variable domain and a light chain variable region respectively comprising an amino acid sequence of at least ~~80~~90% sequence identity to the amino acid sequence selected from the group consisting of:

SEQ ID No:s. 4 and amino acid 1-111 of SEQ ID NO: 3; and

SEQ ID NO: 6 and amino acid 1-110 of SEQ ID NO. 5, wherein the at least 90% sequence identity to the amino acid sequence excludes complementarity-determining regions (CDRs); and

~~a light chain variable domain comprising an amino acid sequence of at least 80% sequence identity to the amino acid sequence selected from the group consisting of amino acid 1-111 of SEQ ID NO. 3 and 1-110 of SEQ ID No. 5; and~~

a vascular endothelial growth factor (VEGF) inhibiting domain comprising an amino acid sequence of at least 80% sequence identity to the amino acid sequence selected from the group consisting of SEQ ID Nos. 1, 2, 9, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, and a combination thereof.

2. The bispecific antibody or antigen-binding portion thereof of claim 1, wherein the polypeptide chain further comprising:

a Fc domain; and

a Fab fragment connected to the N-terminus of the Fc domain, and the Fab fragment comprising the binding domain,

wherein the VEGF inhibiting domain is connected to the C-terminus of the Fc domain.

3. The bispecific antibody or antigen-binding portion thereof of claim 2, further comprising a linker between the Fc domain and the VEGF inhibiting domain.

4. The bispecific antibody or antigen-binding portion thereof of claim 3, wherein the bispecific antibody comprises an amino acid sequence set forth in SEQ ID NO. 12 or 13.

5. The bispecific antibody or antigen-binding portion thereof of claim 1, wherein the bispecific antibody or antigen-binding portion thereof comprises one pairs of polypeptide chains.

6. The bispecific antibody or antigen-binding portion thereof of claim 5, wherein the bispecific antibody is an IgG, IgE, IgM, IgD, IgA, or IgY antibody.

7. The bispecific antibody or antigen-binding portion thereof of claim 6, wherein the bispecific antibody is an IgG antibody.

8. The bispecific antibody or antigen-binding portion thereof of claim 7, wherein the IgG antibody is an IgG1, IgG2, IgG3, or IgG4 antibody.

9. The bispecific antibody or antigen-binding portion thereof of claim 8, wherein the IgG1 antibody is a reduction of antibody-dependent cell-mediated cytotoxicity of IgG1 antibody.

10. The bispecific antibody or antigen-binding portion thereof of claim 1, wherein the bispecific antibody is a human antibody.

11. A pharmaceutical composition, comprising:

a bispecific antibody or an antigen-binding portion thereof of claim 1, and at least one pharmaceutically acceptable carrier.

12. An antibody-drug conjugate comprising:

a therapeutic agent; and

a bispecific antibody or an antigen-binding portion thereof of claim 1,

wherein the therapeutic agent is covalently conjugated to the bispecific antibody or the antigen-binding portion thereof by a linker.

13. Use of the ~~bi-specific~~bispecific antibody or antigen-binding portion thereof as claimed in claim 1 in the manufacture of a medicament for the treatment of cancer.

14. The use of claim 13, wherein the cancer is selected from the group consisting of prostate cancer, lung cancer, Non-Small Cell Lung Cancer (NSCLC), melanoma, lymphoma, breast cancer, head and neck cancer, renal cell carcinoma (RCC), and ovarian cancer.

15. The use of claim 13, wherein ~~the an~~ effective amount of the bispecific antibody or antigen-binding portion thereof is from 0.001 µg/kg to 250 mg/kg.

16. A nucleic acid molecule encoding the bispecific antibody or the antigen-binding portion thereof of claim 31.

~~17. A method for assessing the risk of a subject suffering from cancer, comprising:~~

~~(a) obtaining a body fluid sample or a cell sample from a subject;~~

~~(b) contacting the body fluid sample or the cell sample with a bi-specific antibody or an antigen-binding portion thereof of claim 1 that can detect expression of a panel of cancer markers selected from the group consisting PD-L1 and VEGF;~~

~~(c) assaying the binding of the bi-specific antibody or the antigen-binding portion thereof to the body fluid sample or the cell sample; and~~

~~(d) assessing the cancer status of the subject in an assay by measuring and comparing the level of antibody binding with a normal control to determine whether the subject having the risk of suffering from cancer.~~