What is claimed:

1. An antibody or a ~~functional~~ fragment thereof that binds to human programmed death-ligand 1 (PD-L1) for use in treating cancer, ~~wherein~~ the antibody or ~~functional~~ fragment thereof compris~~es~~ing:

a heavy chain comprising~~:~~ a complementarity determining region (CDR) H1 comprising any one~~amino acids 1-3 and 7-9~~ of SEQ ID NO~~s~~: ~~1~~2, 3, 4, 5, 6 or 7, ~~wherein amino acids 4-6 are not SSY;~~ a CDRH2 comprising any one~~amino acids 9-17~~ of SEQ ID NO~~s~~: 8, 9, 10, 11, 12, 13 or 14~~;~~, and a CDRH3 comprising SEQ ID NO: 15; and

a light chain comprising a CDRL1 comprising SEQ ID NO: 20~~;~~, a CDRL2 comprising SEQ ID NO: 21~~;~~, and CDRL3 comprising any one of SEQ ID NO~~s~~: 22, ~~SEQ ID NO:~~ 75, or ~~SEQ ID NO:~~ 76.

~~2. The antibody or functional fragment thereof according to claim 1, wherein the CDRH1 region comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 2, 3, 4, 5, 6 and 7.~~

~~3. The antibody or functional fragment thereof according to claim 1, wherein the CDRH2 region comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 8, 9, 10, 11, 12, 13 and 14.~~

~~4. The antibody or functional fragment thereof according to claim 1, wherein the variable heavy framework region 1 comprises SEQ ID NO. 26.~~

~~5. The antibody or functional fragment thereof according to claim 1, wherein the variable heavy framework region 1 comprises SEQ ID NO. 27.~~

~~6. The antibody or functional fragment thereof according to claim 1, wherein the variable heavy framework region 2 comprises SEQ ID NO. 28.~~

~~7. The antibody or functional fragment thereof according to claim 1, wherein the variable heavy framework region 3 comprises SEQ ID NO. 29.~~

~~8. The antibody or functional fragment thereof according to claim 1, wherein the variable heavy framework region 4 comprises SEQ ID NO. 30.~~

~~9. The antibody or functional fragment thereof according to claim 1, wherein the variable light framework region 1 comprises SEQ ID NO. 31.~~

~~10. The antibody or functional fragment thereof according to claim 1, wherein the variable light framework region 2 comprises SEQ ID NO. 32.~~

~~11. The antibody or functional fragment thereof according to claim 1, wherein the variable light framework region 3 comprises SEQ ID NO. 33, SEQ ID NO. 77, or SEQ ID NO. 78.~~

~~12. The antibody or functional fragment thereof according to claim 1, wherein the variable light framework region 4 comprises SEQ ID NO. 34.~~

2. The antibody or fragment thereof of claim 1, wherein the cancer is lung cancer, melanoma, renal cell carcinoma (RCC), head and neck cancer, or bladder cancer.

3. The antibody or fragment thereof of claim 2, wherein the lung cancer is non-small cell lung cancer (NSCLC).

4. The antibody or fragment thereof of claim 1, wherein the cancer is a carcinoma.

~~13~~5. The antibody or ~~functional~~ fragment thereof ~~according to~~of claim 1, wherein the ~~variable~~ heavy chain ~~sequence~~ comprises any one ~~amino acid sequence selected from the group consisting~~ of SEQ ID NO~~S~~s: 36, 37, 38, 39, 40 ~~and~~or 41, and the light chain comprises SEQ ID NO: 42.

~~14. The antibody or functional fragment thereof according to claim 1, wherein the variable heavy chain sequence comprises an amino acid sequence selected from the group consisting of SEQ ID NOS: 51, 52, 53, 54, 55 and 56.~~

~~15. The antibody or functional fragment thereof according to claim 1, wherein the variable light chain sequence comprises SEQ ID NO: 42.~~

~~16. A pharmaceutical composition comprising the antibody or functional fragment thereof according to claim 1.~~

~~17. An antibody or a functional fragment thereof that binds to human programmed death ligand 1 (PD-L1), wherein the antibody or functional fragment thereof comprises a heavy chain comprising SEQ ID NO: 35.~~

6. The antibody or fragment thereof of claim 5, wherein the cancer is lung cancer, melanoma, renal cell carcinoma (RCC), head and neck cancer, or bladder cancer.

7. The antibody or fragment thereof of claim 6, wherein the lung cancer is non-small cell lung cancer (NSCLC).

8. The antibody or fragment thereof of claim 5, wherein the cancer is a carcinoma.

~~189~~. ~~A method of inhibiting cancer cell proliferation in a subject, comprising administering an~~The antibody or ~~functional~~ fragment thereof of claim 1, wherein the antibody or fragment thereof~~that~~ binds human PD-L1 with a K_D of at least $8.30x10^{-9}$ ~~and CDRH3 comprising SEQ ID NO: 15 to a subject with cancer~~.

~~19. The method of claim 18, wherein the cancer is a hematological cancer, a neurological cancer, breast cancer, a gastrointestinal cancer, renal cell carcinoma, or a genitourinary cancer.~~

~~20~~10. The antibody or fragment thereof~~method~~ of claim ~~18~~1, wherein the antibody or fragment thereof~~method further comprises a step of~~ is to be administer~~ed~~~~ing~~ to the subject in combination with an additional therapeutic compound.

~~21~~11. The antibody or fragment thereof~~method~~ of claim ~~20~~10, wherein the additional therapeutic compound is a CAR-T cell, a tumor-targeting antibody, an immune response potentiating modality, or a small molecule drug.

~~22. A method of inhibiting tumor cell proliferation in a subject, comprising administering an antibody or functional fragment thereof that binds human PD-L1 with a K_D of at least $2.50x10^{-8}$ and CDRH3 comprising amino acids 6-13 of SEQ ID NO: 18 to a subject with cancer.~~

~~23. The method of claim 22, wherein the method further comprises a step of administering to the subject an additional therapeutic compound.~~

~~24. The method of claim 23, wherein the additional therapeutic compound is a CAR-T cell, a tumor-targeting antibody, an immune response potentiating modality, or a small molecule drug.~~

12. An antibody or a fragment thereof that binds to human programmed death-ligand 1 (PD-L1) for use in treating a cancer selected from a carcinoma, lung cancer, melanoma, renal cell carcinoma (RCC), head and neck cancer, or bladder cancer, wherein the antibody or fragment thereof comprises a heavy chain comprising any one of SEQ ID NOs: 36, 37, 38, 39, 40, 41, 51, 52, 53, 54, 55, or 56 and a light chain comprising SEQ ID NO: 42.

13. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 36.

14. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 37.

15. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 38.

16. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 39.

17. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 40.

18. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 41.

19. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 51.

20. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 52.

21. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 53.

22. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 54.

23. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 55.

24. The antibody or fragment thereof of claim 12, wherein the heavy chain comprises SEQ ID NO: 56.

25. The antibody or fragment thereof of claim 12, wherein the cancer is lung cancer.

26. The antibody or fragment thereof of claim 25, wherein the lung cancer is NSCLC.

27. The antibody or fragment thereof of claim 12, wherein the cancer is melanoma.

28. The antibody or fragment thereof of claim 12, wherein the cancer is RCC.

29. The antibody or fragment thereof of claim 12, wherein the cancer is head and neck cancer.

30. The antibody or fragment thereof of claim 12, wherein the cancer is bladder cancer.

31. The antibody or fragment thereof of claim 12, wherein the cancer is a carcinoma.