

What is claimed is:

1. An anti-PD-L1 antibody or an antigen-binding portion thereof, comprising groups of polypeptides selected from the group consisting of:

(1) a heavy chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 1, 2 and 3, respectively, and a light chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 4, 5 and 6, respectively;

(2) a heavy chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 7, 8 and 9, respectively, and a light chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 10, 11 and 12, respectively;

(3) a heavy chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 13, 14 and 15, respectively, and a light chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 16, 17 and 18, respectively;

(4) a heavy chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 1, 2 and 19, respectively, and a light chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 4, 5 and 6, respectively;

(5) a heavy chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 7, 20 and 9, respectively, and a light chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 10, 11 and 12, respectively; and

(6) a heavy chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 13, 14 and 15, respectively, and a light chain comprising CDR1, CDR2 and CDR3 sequences which correspond to SEQ ID NO: 21, 17 and 18, respectively.

2. The anti-PD-L1 antibody or corresponding antigenbinding portion thereof as claimed in claim 1, comprising a heavy chain variable region having a sequence selected from among the following:

5 SEQ ID NO: 47, 49, 51, 53 or 54, or a sequence which is 70%, 80%, 85%, 90%, 95% or 99% identical to one of said sequences, respectively.

3. The anti-PD-L1 antibody or corresponding antigenbinding
10 portion thereof as claimed in claim 1, comprising a light chain variable region having a sequence selected among the following:

SEQ ID NO: 48, 50, 52, 55 or 56, or a sequence which is 70%, 80%, 85%, 90%, 95% or 99% identical to one of said sequences, respectively.

15 4. The anti-PD-L1 antibody or corresponding antigenbinding portion thereof as claimed in any one of claims 1 - 3, which corresponds to a whole antibody, bispecific antibody, scFv, Fab, Fab', F(ab')₂ or Fv.

20 5. The anti-PD-L1 antibody or corresponding antigenbinding portion thereof as claimed in claim 4, which is a scFv further comprising a connecting peptide between the heavy chain and light
25 chain variable regions.

6. The anti-PD-L1 antibody or corresponding antigenbinding portion thereof as claimed in claim 5, wherein said connecting peptide comprises a sequence of SEQ ID NO: 67.

7. A nucleic acid molecule, comprising a nucleic acid sequence capable of encoding an antibody heavy chain variable region, said antibody heavy chain variable region comprising a group of amino acid sequences selected from the group consisting of:

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- (i) SEQ ID NO: 1-3;
- (ii) SEQ ID NO: 7-9;
- (iii) SEQ ID NO: 13-15;
- (iv) SEQ ID NO: 1, 2 and 19; and
- (v) SEQ ID NO: 7, 20 and 9;

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8. The nucleic acid molecule of claim 7, wherein said antibody heavy chain variable region comprises an amino acid sequence selected from among the following:

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SEQ ID NO: 47, SEQ ID NO: 49, SEQ ID NO: 51, SEQ ID NO: 53, and SEQ ID NO: 54.

9. A nucleic acid molecule, comprising a nucleic acid sequence capable of encoding an antibody light chain variable region, said antibody light chain variable region comprising a group of amino acid sequences selected from the group consisting of:

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- (i) SEQ ID NO: 4-6;
- (ii) SEQ ID NO: 10-12;
- (iii) SEQ ID NO: 16-18; and
- (iv) SEQ ID NO: 21, 17 and 18.

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10. The nucleic acid molecule of claim 9, wherein said antibody heavy chain variable region comprises an amino acid sequence selected from among the following:

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SEQ ID NO: 48, SEQ ID NO: 50, SEQ ID NO: 52, SEQ ID NO: 55, SEQ

ID NO: 56.

11. A vector, comprising a nucleic acid molecule,
comprising a nucleic acid sequence capable of encoding an
antibody heavy chain variable region, said antibody heavy
chain variable region comprising a group of amino acid
sequences selected from the group consisting of:

- (i) SEQ ID NO: 1-3;
- (ii) SEQ ID NO: 7-9;
- (iii) SEQ ID NO: 13-15;
- (iv) SEQ ID NO: 1, 2 and 19; and
- (v) SEQ ID NO: 7, 20 and 9.

12. The vector of claim 11, further comprising a nucleic
acid molecule, comprising a nucleic acid sequence capable of
encoding an antibody light chain variable region, said antibody
light chain variable region comprising a group of amino acid
sequences selected from the group consisting of:

- (i) SEQ ID NO: 4-6;
- (ii) SEQ ID NO: 10-12;
- (iii) SEQ ID NO: 16-18; and
- (iv) SEQ ID NO: 21, 17 and 18.

13. An anti-PD-L1 antibody, the antibody comprising a heavy
chain having an amino acid sequence of SEQ ID NO: 85 and a light
chain having an amino acid sequence of SEQ ID NO: 87, or an
antigen-binding portion of the antibody.

14. A nucleic acid molecule, comprising a nucleic acid
sequence capable of encoding a polypeptide having a sequence
selected from the group consisting of:

SEQ ID NO: 85; and SEQ ID NO: 87.

15. The nucleic acid molecule of claim 14, said nucleic acid molecule comprising a sequence of SEQ ID NO: 86 or SEQ ID
5 NO: 88.

16. A host cell, comprising a nucleic acid capable of encoding a polypeptide having a sequence selected from the group
10 consisting of:

SEQ ID NO: 85; and SEQ ID NO: 87.

17. A composition, comprising:
an antibody having a heavy chain of SEQ ID NO: 85 and a
15 light chain of SEQ ID NO: 87, or an antigen binding portion of the antibody; and

a pharmaceutically acceptable excipient or adjuvant.

20 18. The composition of claim 17, comprising about 275 mM serine, about 10 mM histidine, having pH of about 5.9.

19. The composition of claim 17, comprising about 0.05%
25 polysorbate 80, about 1% D-mannitol, about 120 mM L-proline, about 100 mM L-serine, about 10 mM L-histidine-HCl, having pH of about 5.8.

20. Use of a pharmaceutical composition comprising an antibody having a heavy chain of SEQ ID NO. 85 and a light chain of SEQ ID NO. 87, or an antigen binding portion of the antibody in the preparation of a medicament for treating or preventing a disease or condition associated with modulation of activity of

human PD-L1.

21. The use of claim 20, wherein said disease is a lung cancer, ovarian cancer, colon cancer, colorectal cancer, melanomas, kidney cancer, bladder cancer, breast cancer, liver cancer, lymphomas, hematologic malignancies, head and neck cancer, gliomas, gastric cancer, nasopharyngeal cancer, laryngeal cancer, cervical cancer, uterine cancer or osteosarcomas.

22. The use of claim 21, wherein said disease is a HBV, HCV or HIV infection.