

Claims:

1. An antibody, or antigen binding fragment, which is capable of binding to PD-L1, optionally isolated, having at least one light chain variable region incorporating the following CDRs:

5 LC-CDR1: TGSSSNIGAGYDVH (SEQ ID NO:18)
 LC-CDR2: GNSNRPS (SEQ ID NO:19)
 LC-CDR3: QSYDSSLSGSYVV (SEQ ID NO:20); and

having at least one heavy chain variable region incorporating the following CDRs:

10 HC-CDR1: SYAIS (SEQ ID NO:21)
 HC-CDR2: RIIPILGIANYAQKFQG (SEQ ID NO:22)
 HC-CDR3: SGHGYSYGAFDY (SEQ ID NO:25).

2. The antibody, or antigen binding fragment, of claim 1, comprising a heavy chain variable region sequence and a light chain variable region sequence, wherein:

15 the heavy chain variable region sequence has at least 70% sequence identity to the heavy chain variable region sequence of SEQ ID NO:8 or 35 (Figure 2), and

the light chain variable region sequence has at least 70% sequence identity to the light chain variable region sequence: SEQ ID NO:4 (Figure 1).

20 3. The antibody, or antigen binding fragment, according to claim 1 or claim 2, that specifically binds to human or murine PD-L1.

4. The antibody, or antigen binding fragment, according to any one of claims 1 to 3, that inhibits interaction between human PD-1 and human PD-L1, or inhibits interaction between
 25 murine PD-1 and murine PD-L1.

5. The antibody, or antigen binding fragment, of any one of claims 1 to 4, wherein the antibody is effective to restore T-cell function in T-cells exhibiting T-cell exhaustion or T-cell anergy.

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6. An antibody or antigen binding fragment, optionally isolated, which is capable of binding to PD-L1, which is a bispecific antibody or a bispecific antigen binding fragment comprising (i) an antigen binding fragment according to any one of claims 1 to 5, and (ii) an antigen binding fragment which is capable of binding to a target protein other than PD-L1.

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7. The antibody, or antigen binding fragment, of claim 6, wherein the antigen binding fragment which is capable of binding to a target protein other than PD-L1 is capable of binding to one of CD27, CD28, ICOS, CD40, CD122, OX40, 4-1BB, GITR, LAG-3, B7-H3, B7-H4, BTLA, CTLA-4, A2AR, VISTA, TIM-3, PD-1, KIR, HER-2, HER-3, EGFR, EpCAM, CD30, CD33, CD38, CD20, CD24, CD90, CD15, CD52, CA-125, CD34, CA-15-3, CA-19-9, CEA, CD99, CD117, CD31, CD44, CD123, CD133, ABCB5 and CD45.

8. An *in vitro* complex, optionally isolated, comprising an antibody, or antigen binding fragment, according to any one of claims 1 to 7 bound to PD-L1.

9. A composition comprising the antibody, or antigen binding fragment, of any one of claims 1 to 7 and at least one pharmaceutically-acceptable carrier.

10. An isolated nucleic acid encoding the antibody, or antigen binding fragment of any of one of claims 1 to 7.

11. A vector comprising the nucleic acid of claim 10.

12. A host cell comprising the vector of claim 11.

13. A method for making an antibody, or antigen binding fragment, of any of one of claims 1 to 7, comprising culturing the host cell of claim 12 under conditions suitable for the expression of a vector encoding the antibody, or antigen binding fragment, and recovering the antibody, or antigen binding fragment.

14. An antibody or antigen binding fragment according to any one of claims 1 to 7 for use in therapy, or in a method of medical treatment.

15. An antibody or antigen binding fragment according to any one of claims 1 to 7 for use in the treatment of a T-cell dysfunctional disorder, cancer or an infectious disease.

16. Use of an antibody or antigen binding fragment according to any one of claims 1 to 7 in the manufacture of a medicament for use in the treatment of a T-cell dysfunctional disorder, cancer or an infectious disease.

17. A method, *in vitro*, of enhancing T-cell function comprising administering an antibody or antigen binding fragment according to any one of claims 1 to 7 to a dysfunctional T-cell.

5 18. A method comprising contacting a sample containing, or suspected to contain, PD-L1 with an antibody or antigen binding fragment according to any one of claims 1 to 7 and detecting the formation of a complex of antibody, or antigen binding fragment, and PD-L1.

10 19. A method of diagnosing a disease or condition in a subject, the method comprising contacting, *in vitro*, a sample from the subject with an antibody, or antigen binding fragment, according to any one of claims 1 to 7 and detecting the formation of a complex of antibody, or antigen binding fragment, and PD-L1.

15 20. A method of selecting or stratifying a subject for treatment with PD-1 or PD-L1 targeted agents, the method comprising contacting, *in vitro*, a sample from the subject with an antibody, or antigen binding fragment, according to any one of claims 1 to 7 and detecting the formation of a complex of antibody, or antigen binding fragment, and PD-L1.

20 21. Use of an antibody, or antigen binding fragment, according to any one of 1 to 7 for the detection of PD-L1 *in vitro*.

22. Use of an antibody, or antigen binding fragment, according to any one of 1 to 7 as an *in vitro* diagnostic agent.

25 23. A method for expanding a population of T cells, wherein T cells are contacted *in vitro* or *ex vivo* with an antibody or antigen binding fragment according to any one of claims 1 to 7.