

CLAIMS

1. A binding member having a binding specificity to PD-L1, comprising
 - (i) the variable heavy chain CDR-H1, CDR-H2 and CDR-H3 sequences as set forth in SEQ ID NOs: 6, 7 and 8; and
 - (ii) the variable light chain CDR-L1, CDR-L2 and CDR-L3 sequences as set forth in SEQ ID NOs: 3, 4 and 5.
2. The binding member of claim 1, being humanized.
3. The binding member of any one of the preceding claims, comprising
 - (i) a variable light chain having at least 90% sequence identity to SEQ ID NO: 1; and
 - (ii) a variable heavy chain having at least 90% sequence identity to SEQ ID NO: 2.
4. The binding member of any one of claims 1 to 3, comprising
 - (i) a variable light chain comprising SEQ ID NO: 1; and
 - (ii) a variable heavy chain comprising SEQ ID NO: 2.
5. The binding member of any one of the preceding claims, further comprising a linker sequence, wherein the linker sequence is the sequence set forth in SEQ ID NO: 10, or variants thereof.
6. The binding member of claim 5, wherein the linker sequence is the sequence set forth in SEQ ID NO: 10.
7. The binding member of any one of claims 1 to 4, comprising SEQ ID NO: 9 or SEQ ID NO: 11 or variants thereof.

8. The binding member of claim 7, wherein the variant thereof comprises one, two, three or four substitutions.
9. The binding member of claim 7, wherein the variant thereof comprises five, six, seven, eight,
5 nine, ten, eleven or twelve substitutions.
10. The binding member of claim 7, comprising SEQ ID NO: 9 or SEQ ID NO: 11.
11. The binding member of any one of claims 1 to 10, being or comprising
10 (i) an antibody fragment such as a Fab, a Fab', a F(ab)'₂, a scFv, a Fv fragment, or a scFab;
or
(ii) a full-length antibody molecule.
12. The binding member of any one of claims 1 to 10, being monovalent or multivalent, wherein
15 the multivalent binding member is multispecific, bispecific, a diabody, a single-chain
diabody, or a tandem scFv.
13. The binding member of any one of claims 1 to 10, further comprising an Fc domain.
- 20 14. The binding member of claim 13, wherein the binding member comprises a constant region
selected from the group consisting of human IgG1, IgG2, IgG3 and IgG4 isotypes.
15. The binding member of claim 13, wherein the binding member comprises a constant region
selected from the group consisting of murine IgG1, IgG2A, IgG2B, and IgG3 isotypes.

16. The binding member of any one of claims 1 to 15, further comprising glycosylation, a label or conjugation to a second moiety.
17. The binding member of any one of claims 1 to 16, wherein the binding member is PEGylated or HESylated.
18. An isolated nucleic acid molecule comprising a sequence encoding the binding member of any one of claims 1 to 17.
19. A vector comprising the sequence of the nucleic acid molecule according to claim 18.
20. The vector of claim 19, being an expression vector or a cloning vector.
21. A host cell comprising the nucleic acid molecule of claim 18 or the vector of claims 19 or 20.
22. A composition comprising the binding member of any one of claims 1 to 17, the nucleic acid molecule of claim 18, the vector of claims 19 or 20, or the host cell of claim 21; and further comprising a suitable carrier, diluent or excipient.
23. The composition of claim 22, being a cosmetic, a diagnostic or a pharmaceutical composition.
24. The composition of claim 23, being a pharmaceutical composition and the carrier being a pharmaceutically acceptable carrier, diluent or excipient.
25. The composition of claim 23 or 24, being in a form suitable for parenteral, oral, rectal, systemic, intravenous, subcutaneous, urogenital, topical, intravitreal, intraocular, otic, intranasal, transdermal, intradermal, dermal, sublingual, intracranial, intramuscular, intraperitoneal, or buccal administration.

26. Use of the binding member of any one of claims 1 to 17, the nucleic acid molecule of claim 18, the vector of claims 19 or 20, the host cell of claim 21, or the composition of claims 24 or 25 in the manufacture of a medicament for the treatment of or delay of progression of an PD-L1-mediated disease, wherein the PD-L1-mediated disease is cancer; or wherein said
5 disease is systemic lupus erythematosus, or wherein said disease is systemic lupus erythematosus, sepsis, stroke, pathogen infection or an autoimmune disorder.
27. The use according to claim 26, wherein the cancer is selected from the group consisting of:
NSCLC (non-small cell lung carcinoma), urothelial cancer, melanoma, renal cell carcinoma,
10 Hodgkin's lymphoma, head and neck squamous cell carcinoma, ovarian cancer, gastrointestinal cancer, hepatocellular cancer, glioma, breast cancer, lymphoma, small cell lung carcinoma, myelodysplastic syndromes, prostate cancer, bladder cancer, cervical cancer, non-clear cell kidney cancer, colorectal cancer, sarcomas, colon cancer, kidney cancer, lung cancer, pancreatic cancer or gastric cancer, skin cancer, uterine cancer,
15 glioblastoma, leukemia, carcinoma, Merkel cell carcinoma or renal cell carcinoma (RCC), blood cancer, multiple myeloma, lymphoblastic leukemia (ALL), B cell leukemia, chronic lymphocytic leukemia, non-Hodgkin's lymphoma, and ovarian cancer.

28. The binding member of any one of claims 1 to 17, the nucleic acid molecule of claim 19, the vector of claims 19 or 20, or the host cell of claim 21,
(i) for use as medicament, in particular in the treatment of an PD-L1 mediated disease;
5 (ii) for use in diagnostics;
(iii) for use in cosmetics;
(iv) for detection purposes, or
(v) combinations thereof.
- 10 29. An *in vitro* method of inhibiting growth of a tumor or a tumor cell, comprising the step of contacting the tumor or tumor cell with a therapeutically effective amount of the binding member of any one of claims 1 to 17.
- 15 30. A method of producing the binding member of any one of claims 1 to 17, the method comprising:
(i) cultivating the host cell of claim 21, thereby allowing the binding member to be expressed; and
(ii) recovering the binding member.
- 20 31. The method of claim 30, further comprising purifying the binding member.
32. A method of producing the binding member of any one of claims 1 to 17, the method comprising:
(a) contacting a cell-free expression system with a nucleic acid product template, the nucleic
25 acid product template encoding the binding member according to any one of claims 1 to 17;
(b) allowing transcription and translation of the nucleic acid product template to occur, thereby allowing a reaction mixture to be formed; and
(c) recovering the binding member from the reaction mixture.

33. The method of claim 32, further comprising purifying the binding member.

34. The method of producing the binding member of any one of claims 30 to 33, wherein producing the binding member comprises a step of chemical synthesis.

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35. An *in vitro* method of detecting the presence of PD-L1 in a biological sample, the method comprising:

(a) contacting the biological sample with the binding member of any one of claims 1 to 17 under conditions permissive for specific binding of the binding member to PD-

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L1, and

(b) detecting whether a complex between the binding member and PD-L1 is formed.

36. The *in vitro* method of claim 35, wherein the biological sample is of human origin.

15 37. The *in vitro* method of any one of claims 35 to 36, wherein the biological sample is at least one of a blood sample, a urine sample, a cerebrospinal fluid sample, a biopsy sample, a lymph sample or a combination thereof.

20 38. The *in vitro* method of any one of claims 35 to 37, wherein the method is a method for selecting subjects eligible for therapy with the binding member of any one of claims 1 to 17.

39. An *in vitro* method of inhibiting the interaction between PD-L1 and the receptor complex of PD-1 subunits comprising the step of

(a) providing PD-L1 as well as said receptor complex; and

25 (b) contacting PD-L1 with a binding member according to any one of claims 1 to 17.

40. An *in vitro* method of inhibiting PD-L1 biological activity comprising the step of

(a) providing PD-L1; and

(b) contacting PD-L1 with a binding member according to any one of claims 1 to 17.

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41. A kit comprising the binding member of any one of claims 1 to 17 together with a packaged combination of reagents with instructions.