CLAIMS

1. An isolated antibody molecule capable of binding to human Programmed Death-Ligand 1 (PD-L1), comprising:

(i) a heavy chain variable region (VH) comprising a VHCDR1 amino acid sequence of SEQ ID NO: 1, a VHCDR2 amino acid sequence of SEQ ID NO: 2; and a VHCDR3 amino acid sequence of SEQ ID NO: 3; and a light chain variable region (VL) comprising a VLCDR1 amino acid sequence of SEQ ID NO: 9, a VLCDR2 amino acid sequence of SEQ ID NO: 10, and a VLCDR3 amino acid sequence of SEQ ID NO: 11;

(ii) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 4, a VHCDR2 amino acid sequence of SEQ ID NO: 5, and a VHCDR3 amino acid sequence of SEQ ID NO: 3; and a VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 12, a VLCDR2 amino acid sequence of SEQ ID NO: 13, and a VLCDR3 amino acid sequence of SEQ ID NO: 14;

(iii) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 195, a VHCDR2 amino acid sequence of SEQ ID NO: 2, and a VHCDR3 amino acid sequence of SEQ ID NO: 3; and a VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 9, a VLCDR2 amino acid sequence of SEQ ID NO: 10, and a VLCDR3 amino acid sequence of SEQ ID NO: 11; or

(iv) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 195, a VHCDR2 amino acid sequence of SEQ ID NO: 5, and a VHCDR3 amino acid sequence of SEQ ID NO: 3; and a VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 12, a VLCDR2 amino acid sequence of SEQ ID NO: 13, and a VLCDR3 amino acid sequence of SEQ ID NO: 14.

2. The antibody molecule of claim 1, which has:

a VH comprising at least one, two, three or four framework (FW) regions comprising the amino acid sequence of any of SEQ ID NOs: 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, or 154, or an amino acid sequence at least 90% identical thereto, or having no more than two amino acid substitutions, insertions or deletions compared to the amino acid sequence of any of SEQ ID NOs: 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, or 154; and/or

a VL comprising at least one, two, three or four framework regions comprising the amino acid sequence of any of SEQ ID NOs: 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, or 186, or an amino acid sequence at least 90% identical thereto, or having no more than two amino acid substitutions, insertions or deletions compared to the amino acid sequence of any of 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, or 186.

3. The antibody molecule of claim 1 or 2, which comprises:

a VH comprising an amino acid sequence of SEQ ID NO: 18, 30, 38, 46, 50, 54, 62, 70, or 78, or an amino acid sequence at least 85% identical to any of SEQ ID NOs: 18, 30, 38, 46, 50, 54, 62, 70, or 78; and/or

a VL comprising an amino acid sequence of SEQ ID NO: 22, 26, 34, 42, 58, 66, 74, 82, or 86, or an amino acid sequence at least 85% identical to any of SEQ ID NOs: 22, 26, 34, 42, 58, 66, 74, 82, or 86.

4. The antibody molecule of any one of claims 1-3, which comprises:

a VH comprising an amino acid sequence chosen from SEQ ID NO: 18, SEQ ID NO: 30, SEQ ID NO: 38, SEQ ID NO: 46, SEQ ID NO: 50, SEQ ID NO: 54, SEQ ID NO: 62, SEQ ID NO: 70, or SEQ ID NO:78; and/or

a VL comprising an amino acid sequence chosen from SEQ ID NO: 22, SEQ ID NO: 26, SEQ ID NO: 34, SEQ ID NO: 42, SEQ ID NO: 58, SEQ ID NO: 66, SEQ ID NO: 74, SEQ ID NO: 82, or SEQ ID NO: 86.

5. The antibody molecule of any one of claims 1-4, which comprises:

a heavy chain comprising an amino acid sequence chosen from SEQ ID NO: 20, SEQ ID NO: 32, SEQ ID NO: 40, SEQ ID NO: 48, SEQ ID NO: 52, SEQ ID NO: 56, SEQ ID NO: 64, SEQ ID NO: 72, SEQ ID NO: 80, SEQ ID NO: 91, SEQ ID NO: 96, or SEQ ID NO: 197; and/or

a light chain comprising an amino acid sequence chosen from SEQ ID NO: 24, SEQ ID NO: 28, SEQ ID NO: 36, SEQ ID NO: 44, SEQ ID NO: 60, SEQ ID NO: 68, SEQ ID NO: 76, SEQ ID NO: 84, or SEQ ID NO: 88.

6. The antibody molecule of any one of claims 1-5, which comprises:

(a) a VH comprising the amino acid sequence of SEQ ID NO: 18 and a VL comprising the amino acid sequence of SEQ ID NO: 22;

(b) a VH comprising the amino acid sequence of SEQ ID NO: 18 and a VL comprising the amino acid sequence of SEQ ID NO: 26;

(c) a VH comprising the amino acid sequence of SEQ ID NO: 18 and a VL comprising the amino acid sequence of SEQ ID NO: 86;

(d) a VH comprising the amino acid sequence of SEQ ID NO: 30 and a VL comprising the amino acid sequence of SEQ ID NO: 34;

(e) a VH comprising the amino acid sequence of SEQ ID NO: 30 and a VL comprising the amino acid sequence of SEQ ID NO: 66;

(f) a VH comprising the amino acid sequence of SEQ ID NO: 38 and a VL comprising the amino acid sequence of SEQ ID NO: 42;

(g) a VH comprising the amino acid sequence of SEQ ID NO: 38 and a VL comprising the amino acid sequence of SEQ ID NO: 74;

(h) a VH comprising the amino acid sequence of SEQ ID NO: 46 and a VL comprising the amino acid sequence of SEQ ID NO: 42;

(i) a VH comprising the amino acid sequence of SEQ ID NO: 50 and a VL comprising the amino acid sequence of SEQ ID NO: 42;

(j) a VH comprising the amino acid sequence of SEQ ID NO: 50 and a VL comprising the amino acid sequence of SEQ ID NO: 22;

(k) a VH comprising the amino acid sequence of SEQ ID NO: 50 and a VL comprising the amino acid sequence of SEQ ID NO: 86;

(l) a VH comprising the amino acid sequence of SEQ ID NO: 54 and a VL comprising the amino acid sequence of SEQ ID NO: 58;

(m) a VH comprising the amino acid sequence of SEQ ID NO: 54 and a VL comprising the amino acid sequence of SEQ ID NO: 86;

(n) a VH comprising the amino acid sequence of SEQ ID NO: 62 and a VL comprising the amino acid sequence of SEQ ID NO: 66;

(o) a VH comprising the amino acid sequence of SEQ ID NO: 62 and a VL comprising the amino acid sequence of SEQ ID NO: 86;

(p) a VH comprising the amino acid sequence of SEQ ID NO: 70 and a VL comprising the amino acid sequence of SEQ ID NO: 66; or

(q) a VH comprising the amino acid sequence of SEQ ID NO: 78 and a VL comprising the amino acid sequence of SEQ ID NO: 82.

7. The antibody molecule of any one of claims 1-6, which comprises:

(a) a heavy chain comprising the amino acid sequence of SEQ ID NO: 20 and a light chain comprising the amino acid sequence of SEQ ID NO: 24;

(b) a heavy chain comprising the amino acid sequence of SEQ ID NO: 20 and a light chain comprising the amino acid sequence of SEQ ID NO: 28;

(c) a heavy chain comprising the amino acid sequence of SEQ ID NO: 20 and a light chain comprising the amino acid sequence of SEQ ID NO: 88;

(d) a heavy chain comprising the amino acid sequence of SEQ ID NO: 32 and a light chain comprising the amino acid sequence of SEQ ID NO: 36;

(e) a heavy chain comprising the amino acid sequence of SEQ ID NO: 32 and a light chain comprising the amino acid sequence of SEQ ID NO: 68;

(f) a heavy chain comprising the amino acid sequence of SEQ ID NO: 40 and a light chain comprising the amino acid sequence of SEQ ID NO: 44;

(g) a heavy chain comprising the amino acid sequence of SEQ ID NO: 40 and a light chain comprising the amino acid sequence of SEQ ID NO: 76;

(h) a heavy chain comprising the amino acid sequence of SEQ ID NO: 48 and a light chain comprising the amino acid sequence of SEQ ID NO: 44;

(i) a heavy chain comprising the amino acid sequence of SEQ ID NO: 52 and a light chain comprising the amino acid sequence of SEQ ID NO: 44;

(j) a heavy chain comprising the amino acid sequence of SEQ ID NO: 52 and a light chain comprising the amino acid sequence of SEQ ID NO: 24;

(k) a heavy chain comprising the amino acid sequence of SEQ ID NO: 52 and a light chain comprising the amino acid sequence of SEQ ID NO: 88;

(l) a heavy chain comprising the amino acid sequence of SEQ ID NO: 56 and a light chain comprising the amino acid sequence of SEQ ID NO: 60;

(m) a heavy chain comprising the amino acid sequence of SEQ ID NO: 56 and a light chain comprising the amino acid sequence of SEQ ID NO: 88;

(n) a heavy chain comprising the amino acid sequence of SEQ ID NO: 64 and a light chain comprising the amino acid sequence of SEQ ID NO: 68;

(o) a heavy chain comprising the amino acid sequence of SEQ ID NO: 64 and a light chain comprising the amino acid sequence of SEQ ID NO: 88;

(p) a heavy chain comprising the amino acid sequence of SEQ ID NO: 72 and a light chain comprising the amino acid sequence of SEQ ID NO: 68;

(q) a heavy chain comprising the amino acid sequence of SEQ ID NO: 80 and a light chain comprising the amino acid sequence of SEQ ID NO: 84;

(r) a heavy chain comprising the amino acid sequence of SEQ ID NO: 197 and a light chain comprising the amino acid sequence of SEQ ID NO: 36;

(s) a heavy chain comprising the amino acid sequence of SEQ ID NO: 91 and a light chain comprising the amino acid sequence of SEQ ID NO: 44;

(t) a heavy chain comprising the amino acid sequence of SEQ ID NO: 96 and a light chain comprising the amino acid sequence of SEQ ID NO: 68;

(u) a heavy chain comprising the amino acid sequence of SEQ ID NO: 247 and a light chain comprising the amino acid sequence of SEQ ID NO: 84; or

(v) a heavy chain comprising the amino acid sequence of SEQ ID NO: 260 and a light chain comprising the amino acid sequence of SEQ ID NO: 44.

8. The antibody molecule of any one of claims 1-7, which is a Fab, F(ab')2, Fv, or a single chain Fv fragment (scFv); or comprises

a heavy chain constant region of IgG1, IgG2, IgG3, or IgG4, and/or

a light chain constant region of kappa or lambda.

9. The antibody molecule of claim 8, which comprises:

(a) a human IgG4 heavy chain constant region with a mutation at position 228 of human IgG4 heavy chain constant region according to EU numbering and a kappa light chain constant region;

(b) a human IgG4 heavy chain constant region with a Serine to Proline mutation at position 228 of human IgG4 heavy chain constant region according to EU numbering and a kappa light chain constant region;

(c) a human IgG1 heavy chain constant region with an Asparagine to Alanine mutation at position 297 of human IgG1 heavy chain constant region according to EU numbering and a kappa light chain constant region;

(d) a human IgG1 heavy chain constant region with an Aspartate to Alanine mutation at position 265 and Proline to Alanine mutation at position 329 of human IgG1 heavy chain constant region according to EU numbering and a kappa light chain constant region; or

(e) a human IgG1 heavy chain constant region with a Leucine to Alanine mutation at position 234 and Leucine to Alanine mutation at position 235 of human IgG1 heavy chain constant region according to EU numbering and a kappa light chain constant region.

10. The antibody molecule of any one of claims 1-9, which

(a) is capable of binding to human PD-L1 with a dissociation constant (K_D) of less than about 0.2 nM;

(b) binds an extracellular domain of PD-L1;

(c) is capable of reducing binding of PD-1 to PD-L1, or both; and/or

(d) is capable of enhancing an antigen-specific T cell response.

11. The antibody molecule of any one of claims 1-10, wherein said antibody molecule is a humanized antibody molecule, and/or a monospecific antibody molecule or a bispecific antibody molecule.

12. The antibody molecule of any one of claims 1-11, wherein said antibody molecule has a first binding specificity for PD-L1 and a second binding specificity for TIM-3, LAG-3, CEACAM (*e.g.,* CEACAM-1 and/or CEACAM-5), PD-1 or PD-L2; and/or

wherein said antibody molecule comprises an antigen binding fragment of an antibody; a half antibody, or an antigen binding fragment of a half antibody.

13. A pharmaceutical composition comprising the isolated antibody molecule of any one of claims 1-12 and a pharmaceutically acceptable carrier, excipient or stabilizer.

14. An isolated nucleic acid encoding the antibody heavy or light chain variable region of the antibody molecule of any one of claims 1-12.

15. A first isolated nucleic acid molecule comprising a first nucleotide sequence that encodes a heavy chain variable region (VH), and a second isolated nucleic acid molecule comprising a second nucleotide sequence that encodes a light chain variable region (VL), or

an isolated nucleic acid molecule comprising the first nucleotide sequence that encodes the VH, and the second nucleotide sequence that encodes the VL, of an antibody molecule capable of binding to human Programmed Death Ligand-1 (PD-Ll), wherein the antibody molecule comprises:

(i) the VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 1, a VHCDR2 amino acid sequence of SEQ ID NO: 2; and a VHCDR3 amino acid sequence of SEQ ID NO: 3; and the VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 9, a VLCDR2 amino acid sequence of SEQ ID NO: 10, and a VLCDR3 amino acid sequence of SEQ ID NO: 11;

(ii) the VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 4, a VHCDR2 amino acid sequence of SEQ ID NO: 5, and a VHCDR3 amino acid sequence of SEQ ID NO: 3; and the VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 12, a VLCDR2 amino acid sequence of SEQ ID NO: 13, and a VLCDR3 amino acid sequence of SEQ ID NO: 14;

(iii) the VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 195, a VHCDR2 amino acid sequence of SEQ ID NO: 2, and a VHCDR3 amino acid sequence of SEQ ID NO: 3; and the VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 9, a VLCDR2 amino acid sequence of SEQ ID NO: 10, and a VLCDR3 amino acid sequence of SEQ ID NO: 11; or

(iv) the VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 195, a VHCDR2 amino acid sequence of SEQ ID NO: 5, and a VHCDR3 amino acid sequence of SEQ ID NO: 3; and the VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 12, a VLCDR2 amino acid sequence of SEQ ID NO: 13, and a VLCDR3 amino acid sequence of SEQ ID NO: 14.

16. The nucleic acid molecules of claim 15, wherein the first nucleotide sequence encodes a VH comprising the amino acid sequence of SEQ ID NO: 30 or comprises the nucleotide sequence of SEQ ID NO: 95; and wherein the second nucleotide sequence encodes a VL comprising the amino acid sequence of SEQ ID NO: 66 or comprises the nucleotide sequence of SEQ ID NO: 98.

17. The nucleic acid molecules of claim 15, wherein the first nucleotide sequence encodes a heavy chain comprising the amino acid sequence of SEQ ID NO: 96 or

comprises a heavy chain nucleotide sequence of SEQ ID NO: 97; and wherein the second nucleotide sequence encodes a light chain comprising the amino acid sequence of SEQ ID NO: 68 or comprises a light chain nucleotide sequence of SEQ ID NO: 99.

18. The nucleic acid molecules of claim 15, wherein the first nucleotide sequence encodes a VH comprising the amino acid sequence of SEQ ID NO: 78 or comprises the nucleotide sequence of SEQ ID NO: 100; and wherein the second nucleotide sequence encodes a VL comprising the amino acid sequence of SEQ ID NO: 82 or comprises the nucleotide sequence of SEQ ID NO: 102.

19. The nucleic acid molecules of claim 15, wherein the first nucleotide sequence encodes a heavy chain comprising the amino acid sequence of SEQ ID NO: 80 or comprises a heavy chain nucleotide sequence of SEQ ID NO: 101; and wherein the second nucleotide sequence encodes a light chain comprising the amino acid sequence of SEQ ID NO: 84 or comprises a light chain nucleotide sequence of SEQ ID NO: 103.

20. An expression vector comprising the one or more nucleic acid molecules of any one of claims 14-19.

21. A host cell comprising the one or more nucleic acid molecules of any one of claims 14-19.

22. A method of producing an antibody molecule or fragment thereof, comprising culturing the host cell of claim 21 under conditions suitable for gene expression.

23. A method of detecting PD-L1 polypeptide in a biological sample, comprising (i) contacting the sample (and optionally, a reference sample) with an isolated antibody molecule of any one of claims 1-12 under conditions that allow interaction of the antibody molecule and the PD-L1 polypeptide to occur, and (ii) detecting formation of a complex between the antibody molecule and the sample (and optionally, the reference sample).

24. Use of an antibody molecule according to any one of claims 1-12, or a pharmaceutical composition according to claim 13, in the manufacture of a medicament for the stimulation of an immune response or the treatment of a cancer or an infectious disease in a subject.

25. The use according to claim 24, wherein the cancer is chosen from a solid tumor, a lung cancer, a skin cancer, a renal cancer, a liver cancer, a prostate cancer, a breast cancer, a colorectal cancer, a gastric cancer, a pancreatic cancer, a thyroid cancer, a brain cancer, a uterine cancer, a nasopharyngeal cancer, a head and neck cancer, an ovarian cancer, an endometrial cancer, an endocrine cancer, a bladder cancer, a urothelial cancer, a hematological cancer, and a metastatic lesion of the cancer.

26. The use according to claim 24 or 25, wherein:

(a) the lung cancer is chosen from a non-small cell lung cancer (NSCLC), a lung adenocarcinoma, a squamous cell lung carcinoma, or a small cell lung cancer; or

(b) the skin cancer is a melanoma or a Merkel cell carcinoma; or

(c) the renal cancer is chosen from a renal cell carcinoma (RCC), a metastatic renal cell carcinoma, or a clear cell renal cell carcinoma (CCRCC); or

(d) the hematologic cancer is chosen from a lymphoma, a myeloma, or a leukemia; or

(e) the brain cancer is a glioblastoma; or

(f) the breast cancer is a triple negative breast cancer; or

(g) the liver cancer is a hepatocellular carcinoma; or

(g) the cancer is a MSI-high (high microsatellite instability) cancer.

27. The use according to claim 26, wherein the melanoma is chosen from an advanced melanoma, an unresectable melanoma, a metastatic melanoma, a melanoma with a BRAF mutation, a melanoma with an NRAS mutation, a cutaneous melanoma, or an intraocular melanoma.

28. The use according to claim 26, wherein the NSCLC comprises a KRAS mutation.

29. The use according to any one of claims 24-28, wherein the antibody molecule or pharmaceutical composition is to be used in combination with a second therapeutic agent or procedure,

optionally wherein the second therapeutic agents or procedure is chosen from one or more of chemotherapy, a targeted anti-cancer therapy, an oncolytic drug, a cytotoxic agent, an immune-based therapy, a cytokine, surgical procedure, a radiation procedure, an activator of a costimulatory molecule, an inhibitor of an inhibitory molecule, a vaccine, or a cellular immunotherapy,

optionally, wherein the antibody molecule is to be administered in combination with:

(a) an agonist of a costimulatory molecule chosen from one or more of GITR, OX40, CD2, CD27, CDS, ICAM-1, LFA-1 (CD11a/CD18), ICOS (CD278), 4-1BB (CD137), CD30, CD40, BAFFR, HVEM, CD7, LIGHT, NKG2C, SLAMF7, NKp80, CD160, B7-H3 or CD83 ligand; or

(b) an inhibitor of an immune checkpoint molecule chosen from one or more of PD-L1, PD-L2, CTLA-4, TIM-3, LAG-3, CEACAM-1, CEACAM-5, VISTA, BTLA, TIGIT, LAIR1, CD160, 2B4 or TGFR.

30. The use according to any one of claims 24-28, wherein the antibody molecule or pharmaceutical composition is to be used in combination with one or more of the following:

(a) an inhibitor of PD-1, optionally, wherein the inhibitor of PD-1 is an anti-PD-1 antibody molecule, or is chosen from Nivolumab, Pembrolizumab, Pidilizumab, AMP-224, or AMP 514, e.g., for the treatment of a thyroid cancer, a non-small cell lung cancer, a triple negative breast cancer, an endometrial cancer, a uterine cancer, or a lymphoma;

(b) an inhibitor of LAG-3, optionally, wherein the inhibitor of LAG-3 is an anti-LAG-3 antibody molecule, e.g., for the treatment of an NSCLC, a melanoma, an RCC, or a hematologic cancer;

(c) an inhibitor of TIM-3, optionally, wherein the inhibitor of TIM-3 is an anti-TIM-3 antibody molecule, e.g., for the treatment of a melanoma or a renal cell carcinoma; or

(d) an agonist of GITR, optionally, wherein the agonist of GITR is an anti-GITR antibody molecule or a GITR fusion protein, e.g., for the treatment of a non-small cell lung cancer.

(e) an interleukin, optionally, wherein the interleukin is IL-15, e.g., for the treatment of a solid tumor;

(f) a MEK inhibitor, optionally, wherein the MEK inhibitor is chosen from ARRY-142886, G02442104 (GSK1120212), RDEA436, RDEA119/BAY 869766, AS703026, G00039805 (AZD-6244 or selumetinib), BIX 02188, BIX 02189, CI-1040 (PD-184352), PD0325901, PD98059, U0126, GDC-0973 (Methanone or [3,4-difluoro-2-[(2-fluoro-4-iodophenyl)amino]phenyl][3- hydroxy-3-(25)-2-piperidinyl- l -azetidinyl]-), G-38963, G02443714 (AS703206), or a pharmaceutically acceptable salt or solvate thereof, e.g., for the treatment of a triple negative breast cancer, an NSCLC, or a colorectal cancer;

(g) an FGFR inhibitor, e.g., for the treatment of a hepatocellular carcinoma;

(h) a chemotherapy for the treatment of a lung cancer, optionally, wherein the chemotherapy is a platinum doublet therapy;

(i) an indoleamine-pyrrole 2,3-dioxygenase (IDO) inhibitor for the treatment of a lung cancer, optionally, wherein the IDO inhibitor is INCB24360;

(j) an inhibitor of CTLA-4 for the treatment of a lung cancer or a melanoma, optionally, wherein the inhibitor of CTLA-4 is an anti-CTLA-4 antibody (e.g., ipilimumab) or a soluble ligand of CTLA-4,

optionally, wherein the antibody molecule or pharmaceutical composition is further to be used in combination with a BRAF inhibitor, e.g., vemurafenib or dabrafenib;

(k) a cancer vaccine, e.g., a dendritic cell renal carcinoma (DC-RCC) vaccine;

(l) one or more of: an immune-based therapy, a targeting agent, a VEGF tyrosine kinase inhibitor, an RNAi inhibitor, or an inhibitor of a downstream mediator of VEGF signaling, for the treatment of a renal cancer, optionally, wherein:

(i) the immune-based therapy comprises interleukin-2 or interferon-α;

(ii) the targeting agent is a VEGF inhibitor, e.g., an anti-VEGF antibody;

(iii) the VEGF tyrosine kinase inhibitor is chosen from sunitinib, sorafenib, axitinib, or pazopanib; and/or

(iv) the inhibitor of a downstream mediator of VEGF signaling is an inhibitor of the mammalian target of rapamycin (mTOR), e.g., temsirolimus;

(m) one, two or all of oxaliplatin, leucovorin, or 5-FU, for the treatment of a melanoma, a colorectal cancer, a non-small cell lung cancer, an ovarian cancer, a breast cancer, a prostate cancer, a pancreatic cancer, a hematological cancer, or a renal cell carcinoma; or

(n) a tyrosine kinase inhibitor (e.g., axitinib) for the treatment of a renal cancer.

31. The use according to any one of claims 24-30, wherein the subject has, or is identified as having, one or more of:

(a) a cancer that expresses PD-L1;

(b) a cancer that is positive for one, two, or all of PD-L1, CD8, IFN-γ;

(c) a cancer that is triple positive for PD-L1, CD8 and IFN-γ; or

(d) a cancer that is Tumor Infiltrating Lymphocyte (TIL) positive.

32. The use according to any one of claims 24-31, wherein the antibody molecule or pharmaceutical composition is to be used at a dose of about 1 to 30 mg/kg, e.g., at a dose of about 1 to 5 mg/kg, optionally, wherein the antibody molecule or the pharmaceutical composition is to be used once a week to once every 2, 3, or 4 weeks.

33. The use according to any one of claims 24-32, wherein the antibody molecule or pharmaceutical composition is to be used in combination with one or more of: 1) a protein kinase C (PKC) inhibitor; 2) a heat shock protein 90 (HSP90) inhibitor; 3) an inhibitor of a phosphoinositide 3-kinase (PI3K) and/or target of rapamycin (mTOR); 4) an inhibitor of cytochrome P450 (*e.g.*, a CYP17 inhibitor or a 17alpha-Hydroxylase/C17-20 Lyase inhibitor); 5) an iron chelating agent; 6) an aromatase inhibitor; 7) an inhibitor of p53, *e.g.*, an inhibitor of a p53/Mdm2 interaction; 8) an apoptosis inducer; 9) an angiogenesis inhibitor; 10) an aldosterone synthase inhibitor; 11) a smoothened (SMO) receptor inhibitor; 12) a prolactin receptor (PRLR) inhibitor; 13) a Wnt signaling inhibitor; 14) a CDK4/6 inhibitor; 15) a fibroblast growth factor receptor 2 (FGFR2)/fibroblast growth factor receptor 4 (FGFR4) inhibitor; 16) an inhibitor of macrophage colony-stimulating factor (M-CSF); 17) an inhibitor of one or more of c-KIT, histamine release, Flt3 (*e.g.*, FLK2/STK1) or PKC; 18) an inhibitor of VEGFR-2 (*e.g.*, FLK-1/KDR), PDGFRbeta, c-KIT or Raf kinase C; 19) a somatostatin agonist and/or a growth hormone release inhibitor; 20) an anaplastic lymphoma kinase (ALK) inhibitor; 21) an insulin-like growth factor 1 receptor (IGF-1R) inhibitor; 22) a P-Glycoprotein 1 inhibitor; 23) a vascular endothelial growth factor receptor (VEGFR) inhibitor; 24) a BCR-ABL kinase inhibitor; 25) an FGFR inhibitor; 26) an inhibitor of CYP11B2; 27) a HDM2 inhibitor, *e.g.*, an inhibitor of the HDM2-p53 interaction; 28) an inhibitor of a tyrosine kinase; 29) an inhibitor of c-MET; 30) an inhibitor of JAK; 31) an

inhibitor of DAC; 32) an inhibitor of 11β-hydroxylase; 33) an inhibitor of IAP; 34) an inhibitor of PIM kinase; 35) an inhibitor of Porcupine; 36) an inhibitor of BRAF, *e.g.*, BRAF V600E or wild-type BRAF; 37) an inhibitor of HER3; 38) an inhibitor of MEK; or 39) an inhibitor of a lipid kinase.

34. The use according to any one of claims 24-33, wherein the antibody molecule or pharmaceutical composition is to be used in combination with one or more of Compounds A1 to A51 as described in Table 6.

35. A combination of two, three or more therapeutic agents, for use in the treatment of a cancer in a subject, wherein the therapeutic agents are chosen from two of the following categories (i) and (iii) or all of the following categories (i)-(iii):

(i) an agent that enhances tumor antigen presentation chosen from one or more of: a STING agonist, a TLR agonist, an A2AR antagonist, an oncolytic virus, a TIM-3 modulator, a vascular endothelial growth factor receptor (VEGFR) inhibitor, a c-Met inhibitor, a TGFb inhibitor, an IDO/TDO inhibitor, or a cancer vaccine;

(ii) (optionally) an agent that enhances an effector cell response chosen from one or more of: a GITR agonist, a PD-1 inhibitor, a PD-L1 inhibitor, an inhibitor of IAP (Inhibitor of Apoptosis Protein), an inhibitor of EGFR (Epidermal Growth Factor Receptor), an inhibitor of target of rapamycin (mTOR), IL-15, a CTLA-4 inhibitor, a bispecific antibody molecule that binds to CD3 and a tumor antigen, a CD40 agonist, an OX40 agonist, or a CD27 agonist; or

(iii) an agent that decreases tumor immunosuppression chosen from the isolated antibody molecule of any one of claims 1-12, and, optionally, one or more of: a GITR agonist, an inhibitor of an immune checkpoint molecule chosen from one or more of PD-1, LAG-3, TIM-3 or CTLA-4, a CSF-1/1R inhibitor, an IL-17 inhibitor, an IL-1β inhibitor, a CXCR2 inhibitor, an inhibitor of PI3Kγ or PI3Kδ, a BAFF-R inhibitor, a MALT-1/BTK inhibitor, a JAK inhibitor, a CRTH2 inhibitor, a VEGFR inhibitor, an IL-15, a CTLA-4 inhibitor, an IDO/TDO inhibitor, an A2AR antagonist, a TGFb inhibitor, or a PFKFB3 inhibitor.

36. An antibody molecule of any one of claims 1-12, or a pharmaceutical composition of claim 13, for use in the stimulation of an immune response or the treatment of a cancer or an infectious disease in a subject.

37. An antibody molecule capable of binding to human PD-L1, comprising a VH comprising the amino acid sequence of SEQ ID NO: 78 and a VL comprising the amino acid sequence of SEQ ID NO: 82.

38. An antibody molecule capable of binding to human PD-L1, comprising a VH comprising the amino acid sequence of SEQ ID NO: 30 and a VL comprising the amino acid sequence of SEQ ID NO: 66.

39. An antibody molecule capable of binding to human PD-L1, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 80 and a light chain comprising the amino acid sequence of SEQ ID NO: 84.

40. An antibody molecule capable of binding to human PD-L1, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 96 and a light chain comprising the amino acid sequence of SEQ ID NO: 68.

41. Use of the anti-PD-L1 antibody molecule of any of claims 1-12 in combination with an AKT inhibitor in the manufacture of a medicament for treating a cancer in a subject.

42. The use of claim 41, further in combination with one or more therapeutic agents or procedures.

43. The use of claim 41, wherein the AKT inhibitor is RX-0201 or MK-2206.