CLAIMS

1. An isolated antibody molecule capable of binding to human Lymphocyte Activation Gene-3 (LAG-3), comprising:

(a) a heavy chain variable region (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 light chain variable region (VL) comprising a VLCDR1 amino acid sequence of SEQ ID NO: 13, a VLCDR2 amino acid sequence of SEQ ID NO: 14, and a VLCDR3 amino acid sequence of SEQ ID NO: 15;

(b) a 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 VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 10, a VLCDR2 amino acid sequence of SEQ ID NO: 11, and a VLCDR3 amino acid sequence of SEQ ID NO: 12;

(c) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 286, 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: 13, a VLCDR2 amino acid sequence of SEQ ID NO: 14, and a VLCDR3 amino acid sequence of SEQ ID NO: 15; or

(d) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 286; 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: 10, a VLCDR2 amino acid sequence of SEQ ID NO: 11, and a VLCDR3 amino acid sequence of SEQ ID NO: 12.

2. The antibody molecule of claim 1, wherein said antibody molecule is a humanized antibody molecule, and/or a monospecific antibody molecule or a bispecific antibody molecule.

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

a VH comprising at least one, two, three, or four framework (FW) regions comprising the amino acid sequence of any of SEQ ID NOs: 187, 190, 194, 196, 198, 202, 206, 208, 210, 212, 217, 219, or 221, 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: 187, 190, 194, 196, 198, 202, 206, 208, 210, 212, 217, 219, or 221; 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: 226, 230, 232, 234, 236, 238, 240, 244, 246, 248, 252, 255, 259, 261, 265, 267, 269, or 271, 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: 226, 230, 232, 234, 236, 238, 240, 244, 246, 248, 252, 255, 259, 261, 265, 267, 269, or 271.

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

a VH comprising an amino acid sequence of SEQ ID NOs: 8, 28, 64, 68, 72, 76, 80, 100, 104, or 108, or an amino acid sequence at least 85% identical to any of SEQ ID NOs: 8, 28, 64, 68, 72, 76, 80, 100, 104, or 108; and/or

a VL comprising an amino acid sequence of SEQ ID NOs: 32, 36, 40, 44, 48, 52, 56, 60, 84, 88, 92, or 96, or an amino acid sequence at least 85% identical to any of SEQ ID NOs: 32, 36, 40, 44, 48, 52, 56, 60, 84, 88, 92, or 96.

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

a VH comprising an amino acid sequence chosen from SEQ ID NO: 8, SEQ ID NO: 28, SEQ ID NO: 64, SEQ ID NO: 68, SEQ ID NO: 72, SEQ ID NO: 76, SEQ ID NO: 80, SEQ ID NO: 100, SEQ ID NO: 104, or SEQ ID NO: 108; and/or

a VL comprising the amino acid sequence of SEQ ID NO: 32, SEQ ID NO: 36, SEQ ID NO: 40, SEQ ID NO: 44, SEQ ID NO: 48, SEQ ID NO: 52, SEQ ID NO: 56, SEQ ID NO: 60, SEQ ID NO: 84, SEQ ID NO: 88, SEQ ID NO: 92, or SEQ ID NO: 96.

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

a heavy chain comprising the amino acid sequence of SEQ ID NO: 18, SEQ ID NO: 30, SEQ ID NO: 66, SEQ ID NO: 70, SEQ ID NO: 74, SEQ ID NO: 78, SEQ ID NO: 82, SEQ ID NO: 102, SEQ ID NO: 106, SEQ ID NO: 110, SEQ ID NO: 113, SEQ ID NO: 122, or SEQ ID NO: 134; and/or

a light chain comprising the amino acid sequence of SEQ ID NO: 34, SEQ ID NO: 38, SEQ ID NO: 42, SEQ ID NO: 46, SEQ ID NO: 50, SEQ ID NO: 54, SEQ ID NO: 58, SEQ ID NO: 62, SEQ ID NO: 86, SEQ ID NO: 90, SEQ ID NO: 94, or SEQ ID NO: 98.

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

(a) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 32;

(b) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 36;

(c) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 40;

(d) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 44;

(e) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 48;

(f) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 52;

(g) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 56;

(h) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 60;

(i) a VH comprising the amino acid sequence of SEQ ID NO: 64 or SEQ ID NO: 104; and a VL comprising the amino acid sequence of SEQ ID NO: 36;

(j) a VH comprising the amino acid sequence of SEQ ID NO: 64 or SEQ ID NO: 104; and a VL comprising the amino acid sequence of SEQ ID NO: 40;

(k) a VH comprising the amino acid sequence of SEQ ID NO: 64 or SEQ ID NO: 104; and a VL comprising the amino acid sequence of SEQ ID NO: 56;

(l) a VH comprising the amino acid sequence of SEQ ID NO: 64 or SEQ ID NO: 104; and a VL comprising the amino acid sequence of SEQ ID NO: 60;

(m) a VH comprising the amino acid sequence of SEQ ID NO: 68 or SEQ ID NO: 108; and a VL comprising the amino acid sequence of SEQ ID NO: 36;

(n) a VH comprising the amino acid sequence of SEQ ID NO: 72 or SEQ ID NO: 8; and a VL comprising the amino acid sequence of SEQ ID NO: 40;

(o) a VH comprising the amino acid sequence of SEQ ID NO: 72 or SEQ ID NO: 8; and a VL comprising the amino acid sequence of SEQ ID NO: 60;

(p) a VH comprising the amino acid sequence of SEQ ID NO: 76 and a VL comprising the amino acid sequence of SEQ ID NO: 60;

(q) a VH comprising the amino acid sequence of SEQ ID NO: 80 and a VL comprising the amino acid sequence of SEQ ID NO: 84;

(r) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 88;

(s) a VH comprising the amino acid sequence of SEQ ID NO: 28 or SEQ ID NO: 100; and a VL comprising the amino acid sequence of SEQ ID NO: 92; or

(t) a VH comprising the amino acid sequence of SEQ ID NO: 64 or SEQ ID NO: 104; and a VL comprising the amino acid sequence of SEQ ID NO: 96.

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

(a) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 34;

(b) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 38;

(c) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 42;

(d) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 46;

(e) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 50;

(f) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 54;

(g) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 58;

(h) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 62;

(i) a heavy chain comprising the amino acid sequence of SEQ ID NO: 66 or SEQ ID NO: 106; and a light chain comprising the amino acid sequence of SEQ ID NO: 38;

(j) a heavy chain comprising the amino acid sequence of SEQ ID NO: 66 or SEQ ID NO: 106; and a light chain comprising the amino acid sequence of SEQ ID NO: 42;

(k) a heavy chain comprising the amino acid sequence of SEQ ID NO: 66 or SEQ ID NO: 106; and a light chain comprising the amino acid sequence of SEQ ID NO: 58;

(l) a heavy chain comprising the amino acid sequence of SEQ ID NO: 66 or SEQ ID NO: 106; and a light chain comprising the amino acid sequence of SEQ ID NO: 62;

(m) a heavy chain comprising the amino acid sequence of SEQ ID NO: 70 or SEQ ID NO: 110; and a light chain comprising the amino acid sequence of SEQ ID NO: 38;

(n) a heavy chain comprising the amino acid sequence of SEQ ID NO: 74 or SEQ ID NO: 18; and a light chain comprising the amino acid sequence of SEQ ID NO: 42;

(o) a heavy chain comprising the amino acid sequence of SEQ ID NO: 74 or SEQ ID NO: 18; and a light chain comprising the amino acid sequence of SEQ ID NO: 62;

(p) a heavy chain comprising the amino acid sequence of SEQ ID NO: 78 and a light chain comprising the amino acid sequence of SEQ ID NO: 62;

(q) a heavy chain comprising the amino acid sequence of SEQ ID NO: 82 and a light chain comprising the amino acid sequence of SEQ ID NO: 86;

(r) a heavy chain comprising the amino acid sequence of SEQ ID NO: 30 or SEQ ID NO: 102; and a light chain comprising the amino acid sequence of SEQ ID NO: 94;

(s) a heavy chain comprising the amino acid sequence of SEQ ID NO: 66 or SEQ ID NO: 106; and a light chain comprising the amino acid sequence of SEQ ID NO: 98;

(t) a heavy chain comprising the amino acid sequence of SEQ ID NO: 113 and a light chain comprising the amino acid sequence of SEQ ID NO: 34;

(u) a heavy chain comprising the amino acid sequence of SEQ ID NO: 113 and a light chain comprising the amino acid sequence of SEQ ID NO: 38;

(v) a heavy chain comprising the amino acid sequence of SEQ ID NO: 122 and a light chain comprising the amino acid sequence of SEQ ID NO: 38;

(w) a heavy chain comprising the amino acid sequence of SEQ ID NO: 122 and a light chain comprising the amino acid sequence of SEQ ID NO: 58; or

(x) a heavy chain comprising the amino acid sequence of SEQ ID NO: 134 and a light chain comprising the amino acid sequence of SEQ ID NO: 38.

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

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

a light chain constant region chosen from the light chain constant regions of kappa or lambda.

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

(a) a human IgG4 heavy chain constant region with a mutation at position 108 of SEQ ID NO: 275 or 277 and a kappa light chain constant region;

(b) a human IgG4 heavy chain constant region with a Serine to Proline mutation at position 108 of SEQ ID NO: 275 or 277 and a kappa light chain constant region;

(c) a human IgG1 heavy chain constant region with an Asparagine to Alanine mutation at position 180 of SEQ ID NO: 279 and a kappa light chain constant region;

(d) a human IgG1 heavy chain constant region with an Aspartate to Alanine mutation at position 148, and Proline to Alanine mutation at position 212 of SEQ ID NO: 280 and a kappa light chain constant region; or

(e) a human IgG1 heavy chain constant region with a Leucine to Alanine mutation at position 117 and Leucine to Alanine mutation at position 118 of SEQ ID NO: 281 and a kappa light chain constant region.

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

(a) is capable of binding to human LAG-3 with a dissociation constant (K_D) of less than about 0.2 nM;

(b) binds an extracellular Ig-like domain of LAG-3;

(c) is capable of reducing binding of LAG-3 to a major histocompatibility (MHC) class II molecule, or a cell that expresses an MHC class II molecule; or

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

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

wherein said antibody molecule comprises an antigen binding fragment of an antibody, *e.g.*, a half antibody or antigen binding fragment of a half antibody.

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

14. An isolated nucleic acid encoding heavy chain CDRs 1-3 and/or light chain CDRs 1-3, wherein said nucleic acid comprises a nucleotide sequence of any of SEQ ID NOs: 140-186 or 287.

15. The nucleic acid of claim 14, further comprising:

a nucleotide sequence encoding a VH, wherein said nucleotide sequence comprises any of SEQ ID NOs: 9, 29, 65, 69, 73, 77, 81, 101, 105, 109, 112, 121, 124, 125, 132, or 133, or is at least 85% identical to any of SEQ ID NOs: 9, 29, 65, 69, 73, 77, 81, 101, 105, 109, 112, 121, 124, 125, 132, or 133; and/or

a nucleotide sequence encoding a VL, wherein said nucleotide sequence comprises any of SEQ ID NOs: 33, 37, 41, 45, 49, 53, 57, 61, 85, 89, 93, 97, 115, 118, 128, 129, or 137, or is at least 85% identical to any of SEQ ID NOs: 33, 37, 41, 45, 49, 53, 57, 61, 85, 89, 93, 97, 115, 118, 128, 129, or 137.

16. The nucleic acid of claim 15, further comprising:

a nucleotide sequence encoding a heavy chain, wherein said nucleotide sequence comprises any of SEQ ID NO: 19, 31, 67, 71, 75, 79, 83, 103, 107, 111, 114, 123, 126, 127, 135, or 136, or is at least 85% identical to any of SEQ ID NO: 19, 31, 67, 71, 75, 79, 83, 103, 107, 111, 114, 123, 126, 127, 135, or 136; and/or

a nucleotide sequence encoding a light chain, wherein said nucleotide sequence comprises any of SEQ ID NO: 35, 39, 43, 47, 51, 55, 59, 63, 87, 91, 95, 99, 117, 120, 130, 131, 138, or 139, or is at least 85% identical to any of SEQ ID NO: 35, 39, 43, 47, 51, 55, 59, 63, 87, 91, 95, 99, 117, 120, 130, 131, 138, or 139.

17. An isolated nucleic acid encoding the VH and/or VL of the antibody molecule of any of claims 1-12.

18. An expression vector comprising the nucleic acid of any of claims 14-17.

19. A host cell comprising the nucleic acid of any of claims 14-17.

20. A method of producing an antibody molecule or fragment thereof, comprising culturing the host cell of claim 19 under conditions suitable for gene expression.

21. A method of detecting LAG-3 in a biological sample, comprising (i) contacting the sample *in vitro* (and optionally, a reference sample) with an isolated antibody molecule of any of claims 1-12 under conditions that allow interaction of the antibody molecule and the polypeptide to occur, and (ii) detecting formation of a complex between the antibody molecule and the sample (and optionally, the reference sample).

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

23. The antibody molecule, or pharmaceutical composition, for use as claimed in claim 22, wherein the cancer is chosen from a lung cancer, a melanoma, a renal cancer, a liver cancer, a prostate cancer, a breast cancer, a head and neck cancer, a colorectal cancer, a pancreatic cancer, a brain cancer, a hematological cancer, or a metastatic lesion of the cancer,

optionally, wherein:

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

(b) the melanoma is chosen from an advanced melanoma, an unresectable melanoma, a metastatic melanoma, an HLA-A2 positive-melanoma, a melanoma with a BRAF mutation, a melanoma with an NRAS mutation, a cutaneous melanoma, or an intraocular melanoma;

(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 (e.g., a non-Hodgkin lymphoma), a myeloma, or a leukemia.

24. The antibody molecule, or pharmaceutical composition, for use as claimed in claim 23, wherein the breast cancer is triple negative breast cancer (TNBC).

25. The antibody molecule, or pharmaceutical composition, for use as claimed in any of claims 22-24, 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 agent 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 or pharmaceutical composition is to be administered in combination with:

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

(b) an inhibitor of an immune checkpoint chosen from one or more of PD-1, PD-L1, PD-L2, CTLA4, TIM3, VISTA, BTLA, TIGIT, LAIR1, CD160, 2B4 or TGFR.

26. The antibody molecule, or pharmaceutical composition, for use as claimed in any of claims 22-25, 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;

(b) an inhibitor of TIM-3, optionally, wherein the inhibitor of TIM-3 is an anti-TIM-3 antibody molecule;

(c) an agonist of GITR, optionally, wherein the agonist of GITR is an anti-GITR antibody molecule or a GITR fusion protein; or

(d) an inhibitor of PD-L1 optionally, wherein the inhibitor of PD-L1 is an antibody molecule or chosen from YW243.55.S70, MPDL3280A, MEDI-4736, MSB-0010718C, or MDX-1105.

27. The antibody molecule, or pharmaceutical composition, for use as claimed in claim 26, 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 for the treatment of a non-small cell lung cancer, a melanoma, a renal cell carcinoma, or a hematologic cancer;

(b) an inhibitor of TIM-3 for the treatment of a melanoma or a renal cell carcinoma;

(c) an agonist of GITR for the treatment of a non-small cell lung cancer; or

(d) an inhibitor of PD-L1 for the treatment of a thyroid cancer, a non-small cell lung cancer, a triple negative breast cancer, a uterine cancer, or a lymphoma.

28. The antibody molecule, or pharmaceutical composition, for use as claimed in any of claims 22-27, wherein the antibody molecule or pharmaceutical composition is to be used in combination with one or more of the following:

(a) a tumor antigenic peptide for the treatment of a melanoma, optionally, wherein the tumor antigenic peptide comprises an HLA-A2 peptide;

(b) a chemotherapeutic agent for the treatment of a pancreatic cancer, optionally, wherein the chemotherapeutic agent comprises gemcitabine; or

(c) a chemotherapeutic agent for the treatment of a breast cancer, optionally, wherein the chemotherapeutic agent comprises paclitaxel.

29. The antibody molecule, or pharmaceutical composition, for use as claimed in any of claims 22-28, 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, or 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.

30. The antibody molecule, or pharmaceutical composition, for use as claimed in any of claims 22-29, wherein the antibody molecule or pharmaceutical composition is to be administered at a dose of about 0.1 to 30 mg/kg, e.g., 1 to 30 mg/kg or 1 to 5 mg/kg, optionally, wherein the antibody molecule or pharmaceutical composition is to be administered once a week to once every 2, 3, or 4 weeks or at a dose from about 10 to 20 mg/kg every other week.

31. The antibody molecule, or pharmaceutical composition, for use as claimed in any of claims 22-30, 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 one or more 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.

32. The antibody molecule, or pharmaceutical composition, for use as claimed in any of claims 22-31, 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 7.

33. The antibody molecule, or pharmaceutical composition, for use as claimed in any of claims 22-32, wherein the antibody molecule or pharmaceutical composition is to be used in combination with an anti-PD-1 antibody molecule and/or carboplatin.

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

35. The use of claim 34, wherein the cancer is chosen from a lung cancer, a melanoma, a renal cancer, a liver cancer, a prostate cancer, a breast cancer, a head and neck cancer, a colorectal cancer, a pancreatic cancer, a brain cancer, a hematological cancer, or a metastatic lesion of the cancer,

optionally, wherein:

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

(b) the melanoma is chosen from an advanced melanoma, an unresectable melanoma, a metastatic melanoma, an HLA-A2 positive-melanoma, a melanoma with a BRAF mutation, a melanoma with an NRAS mutation, a cutaneous melanoma, or an intraocular melanoma;

(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 (e.g., a non-Hodgkin lymphoma), a myeloma, or a leukemia.

36. The use of claim 34, wherein the breast cancer is triple negative breast cancer (TNBC).

37. The use of any of claims 33-36, 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 agent 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 or pharmaceutical composition is to be administered in combination with:

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

(b) an inhibitor of an immune checkpoint chosen from one or more of PD-1, PD-L1, PD-L2, CTLA4, TIM3, VISTA, BTLA, TIGIT, LAIR1, CD160, 2B4 or TGFR.

38. The use of any of claims 33-37, 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;

(b) an inhibitor of TIM-3, optionally, wherein the inhibitor of TIM-3 is an anti-TIM-3 antibody molecule;

(c) an agonist of GITR, optionally, wherein the agonist of GITR is an anti-GITR antibody molecule or a GITR fusion protein; or

(d) an inhibitor of PD-L1 optionally, wherein the inhibitor of PD-L1 is an antibody molecule or chosen from YW243.55.S70, MPDL3280A, MEDI-4736, MSB-0010718C, or MDX-1105.

39. The use of claim 38, 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 for the treatment of a non-small cell lung cancer, a melanoma, a renal cell carcinoma, or a hematologic cancer;

(b) an inhibitor of TIM-3 for the treatment of a melanoma or a renal cell carcinoma;

(c) an agonist of GITR for the treatment of a non-small cell lung cancer; or

(d) an inhibitor of PD-L1 for the treatment of a thyroid cancer, a non-small cell lung cancer, a triple negative breast cancer, a uterine cancer, or a lymphoma.

40. The use of any of claims 33-39, wherein the antibody molecule or pharmaceutical composition is to be used in combination with one or more of the following:

(a) a tumor antigenic peptide for the treatment of a melanoma, optionally, wherein the tumor antigenic peptide comprises an HLA-A2 peptide;

(b) a chemotherapeutic agent for the treatment of a pancreatic cancer, optionally, wherein the chemotherapeutic agent comprises gemcitabine; or

(c) a chemotherapeutic agent for the treatment of a breast cancer, optionally, wherein the chemotherapeutic agent comprises paclitaxel.

41. The use of any of claims 33-40, 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, or 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.

42. The use of any of claims 33-41, wherein the antibody molecule or pharmaceutical composition is to be administered at a dose of about 0.1 to 30 mg/kg, e.g., 1 to 30 mg/kg or 1 to 5 mg/kg, optionally, wherein the antibody molecule or pharmaceutical composition is to be administered once a week to once every 2, 3, or 4 weeks or at a dose from about 10 to 20 mg/kg every other week.

43. The use of any of claims 33-42, 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 one or more 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.

44. The use of any of claims 33-45, 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 7.

45. The use of any of claims 33-44, wherein the antibody molecule or pharmaceutical composition is to be used in combination with an anti-PD-1 antibody molecule and/or carboplatin.

46. An isolated antibody molecule capable of binding to human LAG-3, comprising a VH comprising the amino acid sequence of SEQ ID NO: 104 and a VL comprising the amino acid sequence of SEQ ID NO: 56.

47. An isolated antibody molecule capable of binding to human LAG-3, comprising a VH comprising the amino acid sequence of SEQ ID NO: 108 and a VL comprising the amino acid sequence of SEQ ID NO: 36.

48. An isolated antibody molecule capable of binding to human LAG-3, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 122 and a light chain comprising the amino acid sequence of SEQ ID NO: 58.

49. An isolated antibody molecule capable of binding to human LAG-3, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 134 and a light chain comprising the amino acid sequence of SEQ ID NO: 38.

50. A pharmaceutical composition comprising the isolated antibody molecule of any of claims 46-49 and a pharmaceutically acceptable carrier, excipient, or stabilizer.

51. The isolated antibody molecule of any of claims 46-49, or the pharmaceutical composition of claim 50, for use in the stimulation of an immune response in a subject having a cancer or an infectious disease or the treatment of a cancer or an infectious disease in a subject.