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(54) Title: LAG-3 ANTAGONIST THERAPY FOR HEMATOLOGICAL CANCER

(57) Abstract: The disclosure provides a method of treating a human subject afflicted with a hematological cancer with a lymphocyte activation gene-3 (LAG-3) antagonist. In some aspects, the method comprises combination of the LAG-3 antagonist with an additional therapeutic agent *(e.g.*, a programmed death-1 pathway inhibitor). In some aspects, the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg, including subjects less than or equal to about 30 years old or less than about 18 years old. In some aspects, the subject has a weight of less than about 40 kg and/or is less than about 12 years old.

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# LAG-3 ANTAGONIST THERAPY FOR HEMATOLOGICAL CANCER

## CROSS REFERENCE TO RELATED APPLICATIONS

**[0001]** This PCT application claims the priority benefit of U.S. Provisional Application No. 63/273,492, filed October 29, 2021, which is incorporated herein by reference in its entirety.

## FIELD OF THE INVENTION

**[0002]** The present disclosure provides methods of treating human subjects afflicted with hematological cancer comprising a lymphocyte activation gene-3 (LAG-3) antagonist.

## BACKGROUND OF THE INVENTION

**[0003]** The treatment of hematological cancers has improved in recent decades, but there are subsets of patients with poor prognosis, including those who relapse or for whom first-line treatment fails. For example, subjects with Hodgkin lymphoma (HL) having residual disease prior to high-dose chemotherapy/autologous stem cell transplantation have poor long-term relapse-free survival rates, as do patients with recurrent or refractory non-Hodgkin lymphoma (NHL).

**[0004]** There is also little consistency in treating pediatric patients, including adolescents, who are afflicted with recurrent/relapsed or refractory HL or NHL. And, no best approach has been identified for treating them, despite the fact that they account for a significant proportion of patients afflicted with hematological cancers.

**[0005]** Accordingly, there is a need for improved methods for treating human subjects afflicted with hematological cancers.

## SUMMARY OF THE INVENTION

**[0006]** The present disclosure is directed to a method of treating a human subject afflicted with a hematological cancer, the method comprising administering to the subject a

lymphocyte activation gene-3 (LAG-3) antagonist, wherein the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

**[0007]** The present disclosure is directed to a method of treating a human subject afflicted with a hematological cancer, the method comprising administering to the subject a LAG-3 antagonist, wherein the subject has a weight of less than about 40 kg.

**[0008]** In some aspects, the subject is less than about 30 years old.

**[0009]** In some aspects, the subject is less than about 18 years old.

**[0010]** In some aspects, the subject is greater than about 16 years old and has a Karnofsky performance score of greater than or equal to 60.

**[0011]** The present disclosure is directed to a method of treating a human subject afflicted with a hematological cancer, the method comprising administering to the subject a LAG-3 antagonist, wherein the subject is less than about 12 years old.

**[0012]** In some aspects, the subject is subject is less than or equal to about 16 years old.

**[0013]** In some aspects, a subject of the methods who is less than or equal to about 16 years old has a Lansky play-performance score of greater than or equal to 60.

**[0014]** In some aspects, the method is a first line therapy.

**[0015]** In some aspects, the method is a second line therapy.

**[0016]** In some aspects, the method is a third line therapy.

**[0017]** In some aspects, the subject has progressed on a prior therapy.

**[0018]** In some aspects, the subject is naïve to prior immuno-oncology therapy, the subject is naïve to prior immuno-oncology therapy for hematological cancer, or the hematological cancer is naïve to prior immuno-oncology therapy.

**[0019]** In some aspects, the LAG-3 antagonist is administered prior to high-dose chemotherapy, autologous stem cell transplantation, or a combination thereof.

**[0020]** In some aspects, the subject is naïve to prior high-dose chemotherapy, autologous stem cell transplantation, or a combination thereof.

**[0021]** In some aspects, the hematological cancer is recurrent or refractory.

**[0022]** In some aspects, the hematological cancer is metastatic.

**[0023]** In some aspects, the hematological cancer comprises a leukemia, lymphoma, or myeloma.

**[0024]** In some aspects, the hematological cancer comprises a Hodgkin lymphoma.

[0025] In some aspects, the Hodgkin lymphoma comprises nodular lymphocyte-predominant Hodgkin lymphoma.

[0026] In some aspects, the Hodgkin lymphoma comprises a classical Hodgkin lymphoma. In some aspects, the classical Hodgkin lymphoma is a recurrent or refractory classical Hodgkin lymphoma characterized by early relapse, B-symptoms at relapse, extensive disease at a contraindicated radiotherapy field, relapse at a prior radiotherapy field, or a combination thereof. In some aspects, the classical Hodgkin lymphoma is stage IIB with bulky disease, IIIA with E-lesions with or without bulky disease, IIIB, or IV.

[0027] In some aspects, the hematological cancer comprises a non-Hodgkin lymphoma. In some aspects, the non-Hodgkin lymphoma comprises diffuse large B-cell lymphoma, anaplastic large cell lymphoma, Burkitt lymphoma, Burkitt-like lymphoma, lymphoblastic lymphoma, mantle cell lymphoma, peripheral T-cell lymphoma, follicular lymphoma, cutaneous T-cell lymphoma, lymphoplasmactyic lymphoma, marginal zone lymphoma, mucosa-associated lymphoid tissue lymphoma, central nervous system lymphoma, chronic lymphocytic leukemia, small lymphocytic lymphoma, primary mediastinal large B-cell lymphoma, adult T-cell lymphoma, angioimmunoblastic T-cell lymphoma, Waldenström macroglobulinemia, mycosis fungoides, or Sézary syndrome. In some aspects, the non-Hodgkin lymphoma comprises a Burkitt lymphoma, Burkitt-like lymphoma, diffuse large B-cell lymphoma, lymphoblastic lymphoma, or anaplastic large cell lymphoma. In some aspects, the non-Hodgkin lymphoma is a recurrent or refractory non-Hodgkin lymphoma characterized by two or more of a decreased performance status, elevated serum lactate dehydrogenase, and stage III or IV. In some aspects, the non-Hodgkin lymphoma is stage III or IV.

[0028] In some aspects, the hematological cancer comprises acute myeloid leukemia, chronic lymphocytic leukemia, hairy cell leukemia, acute lymphocytic leukemia, acute promyelocytic leukemia, chronic myeloid leukemia, chronic myelomonocytic leukemia, juvenile myelomonocytic leukemia, myeloproliferative neoplasms, systemic mastocytosis, prolymphocytic leukemia, large granular lymphocytic leukemia, or blastic plasmacytoid dendritic cell neoplasm.

[0029] In some aspects, one or more immune cells in tumor tissue from the subject express LAG-3. In some aspects, at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%,

at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the immune cells express LAG-3. In some aspects, at least about 1% of the immune cells express LAG-3. In some aspects, the immune cells are tumor-infiltrating lymphocytes. In some aspects, the tumor-infiltrating lymphocytes are $CD8^+$ cells.

**[0030]** In some aspects, at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of nucleated cells in tumor tissue from the subject express LAG-3. In some aspects, at least about 1% of of the nucleated cells express LAG-3.

**[0031]** In some aspects, one or more tumor cells in tumor tissue from the subject express PD-L1. In some aspects, at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the tumor cells express PD-L1. In some aspects, at least about 1% of the tumor cells express PD-L1.

**[0032]** In some aspects, at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of nucleated cells in tumor tissue from the subject express PD-L1. In some aspects, at least about 1% of the nucleated cells express PD-L1.

**[0033]** In some aspects, the LAG-3 antagonist is an anti-LAG-3 antibody.

**[0034]** In some aspects, the anti-LAG-3 antibody is a full-length antibody. In some aspects, the anti-LAG-3 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a dual-affinity re-targeting antibody (DART), a DVD-Ig, or bispecific antibody.

**[0035]** In some aspects, the anti-LAG-3 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

[0036] In some aspects, the anti-LAG-3 antibody is BMS-986016 (relatlimab), IMP731 (H5L7BW), MK4280 (28G-10, favezelimab), REGN3767 (fianlimab), GSK2831781, humanized BAP050, IMP-701 (LAG525, ieramilimab), aLAG3(0414), aLAG3(0416), Sym022, TSR-033, TSR-075, XmAb841 (XmAb22841), MGD013 (tebotelimab), BI754111, FS118, P 13B02-30, AVA-017, 25F7, AGEN1746, RO7247669, INCAGN02385, IBI-110, EMB-02, IBI-323, LBL-007, ABL501, or comprises an antigen binding portion thereof.

[0037] In some aspects, the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4.

[0038] In some aspects, the anti-LAG-3 antibody comprises: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:5; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:6; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:7; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:8; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:9; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:10.

[0039] In some aspects, the anti-LAG-3 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:3 and 4, respectively.

[0040] In some aspects, the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:1 and 2, respectively.

[0041] In some aspects, the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:21 and 2, respectively.

[0042] In some aspects, the LAG-3 antagonist is a soluble LAG-3 polypeptide. In some aspects, the soluble LAG-3 polypeptide is a fusion polypeptide. In some aspects, the soluble LAG-3 polypeptide comprises a ligand binding fragment of the LAG-3 extracellular domain. In some aspects, the ligand binding fragment of the LAG-3 extracellular domain comprises an amino acid sequence with at least about 90%, at least about 95%, at least about 98%, at least about 99%, or about 100% sequence identity to SEQ ID NO:22. In some aspects, the soluble LAG-3 polypeptide further comprises a half-life extending moiety. In some aspects, the half-life extending moiety comprises an immunoglobulin constant region

or a portion thereof, an immunoglobulin-binding polypeptide, an immunoglobulin G (IgG), albumin-binding polypeptide (ABP), a PASylation moiety, a HESylation moiety, XTEN, a PEGylation moiety, an Fc region, or any combination thereof. In some aspects, the soluble LAG-3 polypeptide is IMP321 (eftilagimod alpha).

**[0043]** In some aspects, the LAG-3 antagonist is formulated for intravenous administration.

**[0044]** In some aspects, the LAG-3 antagonist is administered at a flat dose.

**[0045]** In some aspects, the LAG-3 antagonist is administered at a dose of from at least about 0.25 mg to about 2000 mg, about 0.25 mg to about 1600 mg, about 0.25 mg to about 1200 mg, about 0.25 mg to about 800 mg, about 0.25 mg to about 400 mg, about 0.25 mg to about 100 mg, about 0.25 mg to about 50 mg, about 0.25 mg to about 40 mg, about 0.25 mg to about 30 mg, about 0.25 mg to about 20 mg, about 20 mg to about 2000 mg, about 20 mg to about 1600 mg, about 20 mg to about 1200 mg, about 20 mg to about 800 mg, about 20 mg to about 400 mg, about 20 mg to about 100 mg, about 100 mg to about 2000 mg, about 100 mg to about 1800 mg, about 100 mg to about 1600 mg, about 100 mg to about 1400 mg, about 100 mg to about 1200 mg, about 100 mg to about 1000 mg, about 100 mg to about 800 mg, about 100 mg to about 600 mg, about 100 mg to about 400 mg, about 400 mg to about 2000 mg, about 400 mg to about 1800 mg, about 400 mg to about 1600 mg, about 400 mg to about 1400 mg, about 400 mg to about 1200 mg, or about 400 mg to about 1000 mg.

**[0046]** In some aspects, the LAG-3 antagonist is administered at a dose of about 0.25 mg, about 0.5 mg, about 0.75 mg, about 1 mg, about 1.25 mg, about 1.5 mg, about 1.75 mg, about 2 mg, about 2.25 mg, about 2.5 mg, about 2.75 mg, about 3 mg, about 3.25 mg, about 3.5 mg, about 3.75 mg, about 4 mg, about 4.25 mg, about 4.5 mg, about 4.75 mg, about 5 mg, about 5.25 mg, about 5.5 mg, about 5.75 mg, about 6 mg, about 6.25 mg, about 6.5 mg, about 6.75 mg, about 7 mg, about 7.25 mg, about 7.5 mg, about 7.75 mg, about 8 mg, about 8.25 mg, about 8.5 mg, about 8.75 mg, about 9 mg, about 9.25 mg, about 9.5 mg, about 9.75 mg, about 10 mg, about 20 mg, about 30 mg, about 40 mg, about 50 mg, about 60 mg, about 70 mg, about 80 mg, about 90 mg, about 100 mg, about 110 mg, about 120 mg, about 130 mg, about 140 mg, about 150 mg, about 160 mg, about 170 mg, about 180 mg, about 190 mg, about 200 mg, about 210 mg, about 220 mg, about 230 mg, about 240 mg, about 250 mg, about 260 mg, about 270 mg, about 280 mg, about 290 mg, about 300 mg, about 310 mg, about 320 mg, about 330 mg, about 340 mg, about 350 mg, about 360

mg, about 370 mg, about 380 mg, about 390 mg, about 400 mg, about 410 mg, about 420 mg, about 430 mg, about 440 mg, about 450 mg, about 460 mg, about 470 mg, about 480 mg, about 490 mg, about 500 mg, about 510 mg, about 520 mg, about 530 mg, about 540 mg, about 550 mg, about 560 mg, about 570 mg, about 580 mg, about 590 mg, about 600 mg, about 610 mg, about 620 mg, about 630 mg, about 640 mg, about 650 mg, about 660 mg, about 670 mg, about 680 mg, about 690 mg, about 700 mg, about 710 mg, about 720 mg, about 730 mg, about 740 mg, about 750 mg, about 760 mg, about 770 mg, about 780 mg, about 790 mg, about 800 mg, about 810 mg, about 820 mg, about 830 mg, about 840 mg, about 850 mg, about 860 mg, about 870 mg, about 880 mg, about 890 mg, about 900 mg, about 910 mg, about 920 mg, about 930 mg, about 940 mg, about 950 mg, about 960 mg, about 970 mg, about 980 mg, about 990 mg, about 1000 mg, about 1040 mg, about 1080 mg, about 1100 mg, about 1140 mg, about 1180 mg, about 1200 mg, about 1240 mg, about 1280 mg, about 1300 mg, about 1340 mg, about 1380 mg, about 1400 mg, about 1440 mg, about 1480 mg, about 1500 mg, about 1540 mg, about 1580 mg, about 1600 mg, about 1640 mg, about 1680 mg, about 1700 mg, about 1740 mg, about 1780 mg, about 1800 mg, about 1840 mg, about 1880 mg, about 1900 mg, about 1940 mg, about 1980 mg, or about 2000 mg.

**[0047]** In some aspects, the LAG-3 antagonist is administered at a weight-based dose.

**[0048]** In some aspects, the LAG-3 antagonist is administered at a dose from about 0.003 mg/kg to about 25 mg/kg, about 0.003 mg/kg to about 20 mg/kg, about 0.003 mg/kg to about 15 mg/kg, about 0.003 mg/kg to about 10 mg/kg, about 0.003 mg/kg to about 5 mg/kg, about 0.003 mg/kg to about 1 mg/kg, about 0.003 mg/kg to about 0.9 mg/kg, about 0.003 mg/kg to about 0.8 mg/kg, about 0.003 mg/kg to about 0.7 mg/kg, about 0.003 mg/kg to about 0.6 mg/kg, about 0.003 mg/kg to about 0.5 mg/kg, about 0.003 mg/kg to about 0.4 mg/kg, about 0.003 mg/kg to about 0.3 mg/kg, about 0.003 mg/kg to about 0.2 mg/kg, about 0.003 mg/kg to about 0.1 mg/kg, about 0.1 mg/kg to about 25 mg/kg, about 0.1 mg/kg to about 20 mg/kg, about 0.1 mg/kg to about 15 mg/kg, about 0.1 mg/kg to about 10 mg/kg, about 0.1 mg/kg to about 5 mg/kg, about 0.1 mg/kg to about 1 mg/kg, about 1 mg/kg to about 25 mg/kg, about 1 mg/kg to about 20 mg/kg, about 1 mg/kg to about 15 mg/kg, about 1 mg/kg to about 10 mg/kg, about 1 mg/kg to about 5 mg/kg, about 5 mg/kg to about 25 mg/kg, about 5 mg/kg to about 20 mg/kg, about 5 mg/kg to about 15 mg/kg, about 5 mg/kg to about 10 mg/kg, about 10 mg/kg to about 25 mg/kg, about 10 mg/kg to about 20 mg/kg,

about 10 mg/kg to about 15 mg/kg, about 15 mg/kg to about 25 mg/kg, about 15 mg/kg to about 20 mg/kg, or about 20 mg/kg to about 25 mg/kg.

**[0049]** In some aspects, the LAG-3 antagonist is administered at a dose of about 0.003 mg/kg, about 0.004 mg/kg, about 0.005 mg/kg, about 0.006 mg/kg, about 0.007 mg/kg, about 0.008 mg/kg, about 0.009 mg/kg, about 0.01 mg/kg, about 0.02 mg/kg, about 0.03 mg/kg, about 0.04 mg/kg, about 0.05 mg/kg, about 0.06 mg/kg, about 0.07 mg/kg, about 0.08 mg/kg, about 0.09 mg/kg, about 0.1 mg/kg, about 0.2 mg/kg, about 0.3 mg/kg, about 0.4 mg/kg, about 0.5 mg/kg, about 0.6 mg/kg, about 0.7 mg/kg, about 0.8 mg/kg, about 0.9 mg/kg, about 1.0 mg/kg, about 2.0 mg/kg, about 3.0 mg/kg, about 4.0 mg/kg, about 5.0 mg/kg, about 6.0 mg/kg, about 7.0 mg/kg, about 8.0 mg/kg, about 9.0 mg/kg, about 10.0 mg/kg, about 11.0 mg/kg, about 12.0 mg/kg, about 13.0 mg/kg, about 14.0 mg/kg, about 15.0 mg/kg, about 16.0 mg/kg, about 17.0 mg/kg, about 18.0 mg/kg, about 19.0 mg/kg, about 20.0 mg/kg, about 21.0 mg/kg, about 22.0 mg/kg, about 23.0 mg/kg, about 24.0 mg/kg, or about 25.0 mg/kg.

**[0050]** In some aspects, the dose is administered once about every one week, once about every two weeks, once about every three weeks, once about every four weeks, once about every five weeks, once about every six weeks, once about every seven weeks, once about every eight weeks, once about every nine weeks, once about every ten weeks, once about every eleven weeks, or once about every twelve weeks.

**[0051]** In some aspects, the method further comprises administering to the subject an additional therapeutic agent. In some aspects, the additional therapeutic agent comprises an anti-cancer agent. In some aspects, the anti-cancer agent comprises a tyrosine kinase inhibitor, an anti-angiogenesis agent, a checkpoint inhibitor, a checkpoint stimulator, a chemotherapeutic agent, an immunotherapeutic agent, a platinum agent, an alkylating agent, a taxane, a nucleoside analog, an antimetabolite, a topisomerase inhibitor, an anthracycline, a vinca alkaloid, or any combination thereof.

**[0052]** In some aspects, the tyrosine kinase inhibitor comprises afatinib, erlotinib, dacomitinib, gefitinib, osimertinib, alectinib, brigatinib, ceritinib, crizotinib, lorlatinib, entrectinib, dabrafenib, trametinib, vemurafenib, larotrectinib, or any combination thereof.

**[0053]** In some aspects, the anti-angiogenesis agent comprises an inhibitor of a vascular endothelial growth factor (VEGF), VEGF receptor (VEGFR), platelet-derived growth factor (PDGF), PDGF receptor (PDGFR), angiopoietin (Ang), tyrosine kinase with Ig-like

and EGF-like domains (Tie) receptor, hepatocyte growth factor (HGF), tyrosine-protein kinase Met (c-MET), C-type lectin family 14 member A (CLEC14A), multimerin 2 (MMRN2), shock protein 70-1A (HSP70-1A), a epidermal growth factor (EGF), EGF receptor (EGFR), or any combination thereof.

**[0054]** In some aspects, the anti-angiogenesis agent comprises bevacizumab, ramucirumab, aflibercept, tanibirumab, olaratumab, nesvacumab, AMG780, MEDI3617, vanucizumab, rilotumumab, ficlatuzumab, TAK-701, onartuzumab, emibetuzumab, or any combination thereof.

**[0055]** In some aspects, the checkpoint inhibitor comprises a programmed death-1 (PD-1) pathway inhibitor, a cytotoxic T-lymphocyte-associated protein 4 (CTLA-4) inhibitor, a T cell immunoglobulin and ITIM domain (TIGIT) inhibitor, a T cell immunoglobulin and mucin-domain containing-3 (TIM-3) inhibitor, a TIM-1 inhibitor, a TIM-4 inhibitor, a B7-H3 inhibitor, a B7-H4 inhibitor, a B and T cell lymphocyte attenuator (BTLA) inhibitor, a V-domain Ig suppressor of T cell activation (VISTA) inhibitor, an indoleamine 2,3-dioxygenase (IDO) inhibitor, a nicotinamide adenine dinucleotide phosphate oxidase isoform 2 (NOX2) inhibitor, a killer-cell immunoglobulin-like receptor (KIR) inhibitor, an adenosine A2a receptor (A2aR) inhibitor, a transforming growth factor beta (TGF-β) inhibitor, a phosphoinositide 3-kinase (PI3K) inhibitor, a CD47 inhibitor, a CD48 inhibitor, a CD73 inhibitor, a CD113 inhibitor, a sialic acid-binding immunoglobulin-like lectin-7 (SIGLEC-7) inhibitor, a SIGLEC-9 inhibitor, a SIGLEC-15 inhibitor, a glucocorticoid-induced TNFR-related protein (GITR) inhibitor, a galectin-1 inhibitor, a galectin-9 inhibitor, a carcinoembryonic antigen-related cell adhesion molecule-1 (CEACAM-1) inhibitor, a G protein-coupled receptor 56 (GPR56) inhibitor, a glycoprotein A repetitions predominant (GARP) inhibitor, a 2B4 inhibitor, a programmed death-1 homolog (PD1H) inhibitor, a leukocyte-associated immunoglobulin-like receptor 1 (LAIR1) inhibitor, or any combination thereof.

**[0056]** In some aspects, the checkpoint inhibitor comprises a PD-1 pathway inhibitor.

**[0057]** In some aspects, the PD-1 pathway inhibitor is an anti-PD-1 antibody and/or an anti-PD-L1 antibody.

**[0058]** In some aspects, the PD-1 pathway inhibitor is an anti-PD-1 antibody.

**[0059]** In some aspects, the anti-PD-1 antibody is a full-length antibody.

**[0060]** In some aspects, the anti-PD-1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

**[0061]** In some aspects, the anti-PD-1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

**[0062]** In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, PDR001 (spartalizumab), MEDI-0680, TSR-042, cemiplimab, JS001, PF-06801591, BGB-A317, BI 754091, INCSHR1210, GLS-010, AM-001, STI-1110, AGEN2034, MGA012, BCD-100, IBI308, SSI-361, or comprises an antigen binding portion thereof.

**[0063]** In some aspects, the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14.

**[0064]** In some aspects, the anti-PD-1 antibody comprises: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:15; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:16; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:17; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:18; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:19; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:20.

**[0065]** In some aspects, the anti-PD-1 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:13 and 14, respectively.

**[0066]** In some aspects, the anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

**[0067]** In some aspects, the PD-1 pathway inhibitor is a soluble PD-L2 polypeptide. In some aspects, the soluble PD-L2 polypeptide is a fusion polypeptide. In some aspects, the soluble PD-L2 polypeptide comprises a ligand binding fragment of the PD-L2 extracellular domain. In some aspects, the soluble PD-L2 polypeptide further comprises a half-life extending moiety. In some aspects, the half-life extending moiety comprises an immunoglobulin constant region or a portion thereof, an immunoglobulin-binding

polypeptide, an immunoglobulin G (IgG), albumin-binding polypeptide (ABP), a PASylation moiety, a HESylation moiety, XTEN, a PEGylation moiety, an Fc region, or any combination thereof. In some aspects, the soluble PD-L2 polypeptide is AMP-224.

**[0068]** In some aspects, the PD-1 pathway inhibitor is an anti-PD-L1 antibody.

**[0069]** In some aspects, the anti-PD-L1 antibody is a full-length antibody.

**[0070]** In some aspects, the anti-PD-L1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

**[0071]** In some aspects, the anti-PD-L1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

**[0072]** In some aspects, the anti-PD-L1 antibody is BMS-936559, atezolizumab, durvalumab, avelumab, STI-1014, CX-072, KN035, LY3300054, BGB-A333, ICO 36, FAZ053, CK-301, or comprises an antigen binding portion thereof.

**[0073]** In some aspects, the PD-1 pathway inhibitor is BMS-986189.

**[0074]** In some aspects, the checkpoint inhibitor comprises a CTLA-4 inhibitor.

**[0075]** In some aspects, the CTLA-4 inhibitor is an anti-CTLA-4 antibody.

**[0076]** In some aspects, the anti-CTLA-4 antibody is a full-length antibody.

**[0077]** In some aspects, the anti-CTLA-4 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

**[0078]** In some aspects, the anti-CTLA-4 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

**[0079]** In some aspects, the anti-CTLA-4 antibody is ipilimumab, tremelimumab, MK-1308, AGEN-1884, or comprises an antigen binding portion thereof.

**[0080]** In some aspects, the LAG-3 antagonist and the checkpoint inhibitor are formulated separately. In some aspects, each checkpoint inhibitor is formulated separately when the checkpoint inhibitor comprises more than one checkpoint inhibitor. In some aspects, the checkpoint inhibitor is administered before the LAG-3 antagonist. In some aspects, the LAG-3 antagonist is administered before the checkpoint inhibitor.

[0081] In some aspects, the LAG-3 antagonist and the checkpoint inhibitor are formulated together. In some aspects, two or more checkpoint inhibitors are formulated together when the checkpoint inhibitor comprises more than one checkpoint inhibitor.

[0082] In some aspects, the LAG-3 antagonist and the checkpoint inhibitor are administered concurrently.

[0083] In some aspects, the checkpoint inhibitor is administered at a flat dose.

[0084] In some aspects, the checkpoint inhibitor is administered at a dose of from at least about 0.25 mg to about 2000 mg, about 0.25 mg to about 1600 mg, about 0.25 mg to about 1200 mg, about 0.25 mg to about 800 mg, about 0.25 mg to about 400 mg, about 0.25 mg to about 100 mg, about 0.25 mg to about 50 mg, about 0.25 mg to about 40 mg, about 0.25 mg to about 30 mg, about 0.25 mg to about 20 mg, about 20 mg to about 2000 mg, about 20 mg to about 1600 mg, about 20 mg to about 1200 mg, about 20 mg to about 800 mg, about 20 mg to about 400 mg, about 20 mg to about 100 mg, about 100 mg to about 2000 mg, about 100 mg to about 1800 mg, about 100 mg to about 1600 mg, about 100 mg to about 1400 mg, about 100 mg to about 1200 mg, about 100 mg to about 1000 mg, about 100 mg to about 800 mg, about 100 mg to about 600 mg, about 100 mg to about 400 mg, about 400 mg to about 2000 mg, about 400 mg to about 1800 mg, about 400 mg to about 1600 mg, about 400 mg to about 1400 mg, about 400 mg to about 1200 mg, or about 400 mg to about 1000 mg.

[0085] In some aspects, the checkpoint inhibitor is administered at a dose of about 0.25 mg, about 0.5 mg, about 0.75 mg, about 1 mg, about 1.25 mg, about 1.5 mg, about 1.75 mg, about 2 mg, about 2.25 mg, about 2.5 mg, about 2.75 mg, about 3 mg, about 3.25 mg, about 3.5 mg, about 3.75 mg, about 4 mg, about 4.25 mg, about 4.5 mg, about 4.75 mg, about 5 mg, about 5.25 mg, about 5.5 mg, about 5.75 mg, about 6 mg, about 6.25 mg, about 6.5 mg, about 6.75 mg, about 7 mg, about 7.25 mg, about 7.5 mg, about 7.75 mg, about 8 mg, about 8.25 mg, about 8.5 mg, about 8.75 mg, about 9 mg, about 9.25 mg, about 9.5 mg, about 9.75 mg, about 10 mg, about 20 mg, about 30 mg, about 40 mg, about 50 mg, about 60 mg, about 70 mg, about 80 mg, about 90 mg, about 100 mg, about 110 mg, about 120 mg, about 130 mg, about 140 mg, about 150 mg, about 160 mg, about 170 mg, about 180 mg, about 190 mg, about 200 mg, about 210 mg, about 220 mg, about 230 mg, about 240 mg, about 250 mg, about 260 mg, about 270 mg, about 280 mg, about 290 mg, about 300 mg, about 310 mg, about 320 mg, about 330 mg, about 340 mg, about 350 mg, about

360 mg, about 370 mg, about 380 mg, about 390 mg, about 400 mg, about 410 mg, about 420 mg, about 430 mg, about 440 mg, about 450 mg, about 460 mg, about 470 mg, about 480 mg, about 490 mg, about 500 mg, about 510 mg, about 520 mg, about 530 mg, about 540 mg, about 550 mg, about 560 mg, about 570 mg, about 580 mg, about 590 mg, about 600 mg, about 610 mg, about 620 mg, about 630 mg, about 640 mg, about 650 mg, about 660 mg, about 670 mg, about 680 mg, about 690 mg, about 700 mg, about 710 mg, about 720 mg, about 730 mg, about 740 mg, about 750 mg, about 760 mg, about 770 mg, about 780 mg, about 790 mg, about 800 mg, about 810 mg, about 820 mg, about 830 mg, about 840 mg, about 850 mg, about 860 mg, about 870 mg, about 880 mg, about 890 mg, about 900 mg, about 910 mg, about 920 mg, about 930 mg, about 940 mg, about 950 mg, about 960 mg, about 970 mg, about 980 mg, about 990 mg, about 1000 mg, about 1040 mg, about 1080 mg, about 1100 mg, about 1140 mg, about 1180 mg, about 1200 mg, about 1240 mg, about 1280 mg, about 1300 mg, about 1340 mg, about 1380 mg, about 1400 mg, about 1440 mg, about 1480 mg, about 1500 mg, about 1540 mg, about 1580 mg, about 1600 mg, about 1640 mg, about 1680 mg, about 1700 mg, about 1740 mg, about 1780 mg, about 1800 mg, about 1840 mg, about 1880 mg, about 1900 mg, about 1940 mg, about 1980 mg, or about 2000 mg.

**[0086]** In some aspects, the checkpoint inhibitor is administered as a weight-based dose.

**[0087]** In some aspects, the checkpoint inhibitor is administered at a dose from about 0.003 mg/kg to about 25 mg/kg, about 0.003 mg/kg to about 20 mg/kg, about 0.003 mg/kg to about 15 mg/kg, about 0.003 mg/kg to about 10 mg/kg, about 0.003 mg/kg to about 5 mg/kg, about 0.003 mg/kg to about 1 mg/kg, about 0.003 mg/kg to about 0.9 mg/kg, about 0.003 mg/kg to about 0.8 mg/kg, about 0.003 mg/kg to about 0.7 mg/kg, about 0.003 mg/kg to about 0.6 mg/kg, about 0.003 mg/kg to about 0.5 mg/kg, about 0.003 mg/kg to about 0.4 mg/kg, about 0.003 mg/kg to about 0.3 mg/kg, about 0.003 mg/kg to about 0.2 mg/kg, about 0.003 mg/kg to about 0.1 mg/kg, about 0.1 mg/kg to about 25 mg/kg, about 0.1 mg/kg to about 20 mg/kg, about 0.1 mg/kg to about 15 mg/kg, about 0.1 mg/kg to about 10 mg/kg, about 0.1 mg/kg to about 5 mg/kg, about 0.1 mg/kg to about 1 mg/kg, about 1 mg/kg to about 25 mg/kg, about 1 mg/kg to about 20 mg/kg, about 1 mg/kg to about 15 mg/kg, about 1 mg/kg to about 10 mg/kg, about 1 mg/kg to about 5 mg/kg, about 5 mg/kg to about 25 mg/kg, about 5 mg/kg to about 20 mg/kg, about 5 mg/kg to about 15 mg/kg, about 5 mg/kg to about 10 mg/kg, about 10 mg/kg to about 25 mg/kg, about 10 mg/kg to about 20 mg/kg,

about 10 mg/kg to about 15 mg/kg, about 15 mg/kg to about 25 mg/kg, about 15 mg/kg to about 20 mg/kg, or about 20 mg/kg to about 25 mg/kg.

**[0088]** In some aspects, the checkpoint inhibitor is administered at a dose of about 0.003 mg/kg, about 0.004 mg/kg, about 0.005 mg/kg, about 0.006 mg/kg, about 0.007 mg/kg, about 0.008 mg/kg, about 0.009 mg/kg, about 0.01 mg/kg, about 0.02 mg/kg, about 0.03 mg/kg, about 0.04 mg/kg, about 0.05 mg/kg, about 0.06 mg/kg, about 0.07 mg/kg, about 0.08 mg/kg, about 0.09 mg/kg, about 0.1 mg/kg, about 0.2 mg/kg, about 0.3 mg/kg, about 0.4 mg/kg, about 0.5 mg/kg, about 0.6 mg/kg, about 0.7 mg/kg, about 0.8 mg/kg, about 0.9 mg/kg, about 1.0 mg/kg, about 2.0 mg/kg, about 3.0 mg/kg, about 4.0 mg/kg, about 5.0 mg/kg, about 6.0 mg/kg, about 7.0 mg/kg, about 8.0 mg/kg, about 9.0 mg/kg, about 10.0 mg/kg, about 11.0 mg/kg, about 12.0 mg/kg, about 13.0 mg/kg, about 14.0 mg/kg, about 15.0 mg/kg, about 16.0 mg/kg, about 17.0 mg/kg, about 18.0 mg/kg, about 19.0 mg/kg, about 20.0 mg/kg, about 21.0 mg/kg, about 22.0 mg/kg, about 23.0 mg/kg, about 24.0 mg/kg, or about 25.0 mg/kg.

**[0089]** In some aspects, the dose is administered once about every one week, once about every two weeks, once about every three weeks, once about every four weeks, once about every five weeks, once about every six weeks, once about every seven weeks, once about every eight weeks, once about every nine weeks, once about every ten weeks, once about every eleven weeks, or once about every twelve weeks.

**[0090]** The present disclosure is directed to a method of treating a human subject afflicted with recurrent or refractory classical Hodgkin lymphoma, the method comprising administering to the subject: (a) about 160 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody, (b) about 80 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody, (c) about 2 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, or (d) about 1 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and wherein the subject is

greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

**[0091]** In some aspects, the subject is less than about 30 years old.

**[0092]** In some aspects, the subject is less than about 18 years old.

**[0093]** In some aspects, the subject is greater than about 16 years old and has a Karnofsky performance score of greater than or equal to about 60.

**[0094]** The present disclosure is directed to a method of treating a human subject afflicted with recurrent or refractory classical Hodgkin lymphoma, the method comprising administering to the subject: (a) about 2 mg/kg of an anti-LAG-3 antibody and 6 mg/kg of an anti-PD-1 antibody, or (b) about 1 mg/kg of an anti-LAG-3 antibody and 6 mg/kg of an anti-PD-1 antibody, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and wherein the subject has a weight of less than about 40 kg, is less than about 12 years old, or both.

**[0095]** In some aspects, the subject is less than or equal to about 16 years old.

**[0096]** In some aspects, the subject has a Lansky play-performance score of greater than or equal to 60.

**[0097]** In some aspects, the recurrent or refractory classical Hodgkin lymphoma is characterized by early relapse, B-symptoms at relapse, extensive disease at a contraindicated radiotherapy field, relapse at a prior radiotherapy field, or a combination thereof.

**[0098]** In some aspects, the recurrent or refractory classical Hodgkin lymphoma is stage IIB with bulky disease, IIIA with E-lesions with or without bulky disease, IIIB, or IV.

**[0099]** The present disclosure is directed to a method of treating a human subject afflicted with recurrent or refractory non-Hodgkin lymphoma, the method comprising administering to the subject: (a) about 160 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody, (b) about 80 mg of anti-LAG-3 antibody and about 480 mg of anti-PD-1 antibody, (c) about 2 mg/kg of anti-LAG-3 antibody and about 6 mg/kg of anti-PD-1

antibody, or (d) about 1 mg/kg of anti-LAG-3 antibody and about 6 mg/kg of anti-PD-1 antibody, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and wherein the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

**[0100]** In some aspects, the subject is less than about 30 years old.

**[0101]** In some aspects, the subject is less than about 18 years old.

**[0102]** In some aspects, the subject is greater than about 16 years old and has a Karnofsky performance score of greater than or equal to 60.

**[0103]** The present disclosure is directed to a method of treating a human subject afflicted with recurrent or refractory non-Hodgkin lymphoma, the method comprising administering to the subject: (a) about 2 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, or (b) about 1 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and wherein the subject has a weight of less than about 40 kg, is less than about 12 years old, or both.

**[0104]** In some aspects, the subject is less than or equal to about 16 years old.

**[0105]** In some aspects, the subject has a Lansky play-performance score of greater than or equal to 60.

**[0106]** In some aspects, the recurrent or refractory non-Hodgkin lymphoma comprises diffuse large B-cell lymphoma, anaplastic large cell lymphoma, Burkitt lymphoma, Burkitt-like lymphoma, lymphoblastic lymphoma, mantle cell lymphoma, peripheral T-cell lymphoma, follicular lymphoma, cutaneous T-cell lymphoma, lymphoplasmactyic

lymphoma, marginal zone lymphoma, mucosa-associated lymphoid tissue lymphoma, central nervous system lymphoma, chronic lymphocytic leukemia, small lymphocytic lymphoma, primary mediastinal large B-cell lymphoma, adult T-cell lymphoma, angioimmunoblastic T-cell lymphoma, Waldenström macroglobulinemia, mycosis fungoides, or Sézary syndrome.

**[0107]** In some aspects, the recurrent or refractory non-Hodgkin lymphoma comprises a Burkitt lymphoma, Burkitt-like lymphoma, diffuse large B-cell lymphoma, lymphoblastic lymphoma, or anaplastic large cell lymphoma.

**[0108]** In some aspects, the recurrent or refractory non-Hodgkin lymphoma is characterized by two or more of a decreased performance status, elevated serum lactate dehydrogenase, and stage III or IV.

**[0109]** In some aspects, the recurrent or refractory non-Hodgkin lymphoma is stage III or IV.

**[0110]** In some aspects, one or more immune cells in tumor tissue from the subject express LAG-3. In some aspects, at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the immune cells express LAG-3. In some aspects, at least about 1% of the immune cells express LAG-3. In some aspects, the immune cells are tumor-infiltrating lymphocytes. In some aspects, the tumor-infiltrating lymphocytes are $CD8^+$ cells.

**[0111]** In some aspects, at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of nucleated cells in tumor tissue from the subject express LAG-3. In some aspects, at least about 1% of the nucleated cells express LAG-3.

**[0112]** In some aspects, one or more tumor cells in tumor tissue from the subject express PD-L1. In some aspects, at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about

60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the tumor cells express PD-L1. In some aspects, at least about 1% of the tumor cells express PD-L1.

**[0113]** In some aspects, at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of nucleated cells in tumor tissue from the subject express PD-L1. In some aspects, at least about 1% of the nucleated cells express PD-L1.

**[0114]** In some aspects, (a) the anti-LAG-3 antibody comprises a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:5, SEQ ID NO:6, and SEQ ID NO:7, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10, respectively, and (b) the anti-PD-1 antibody comprises a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:15, SEQ ID NO:16, and SEQ ID NO:17, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:18, SEQ ID NO:19, and SEQ ID NO:20, respectively.

**[0115]** In some aspects, the anti-LAG-3 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:3 and 4, respectively, and the anti-PD-1 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:13 and 14, respectively.

**[0116]** In some aspects, the anti-LAG-3 antibody and/or the anti-PD-1 antibody is a full-length antibody.

**[0117]** In some aspects, the anti-LAG-3 antibody and/or anti-PD-1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

**[0118]** In some aspects, the anti-LAG-3 antibody and/or anti-PD-1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

**[0119]** In some aspects, the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:1 and 2, respectively, and the anti-PD-

1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

**[0120]** In some aspects, the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:21 and 2, respectively, and the anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

**[0121]** In some aspects, the method further comprises administering to the subject an additional therapeutic agent. In some aspects, the additional therapeutic agent comprises an anti-cancer agent. In some aspects, the anti-cancer agent comprises a tyrosine kinase inhibitor, an anti-angiogenesis agent, a checkpoint inhibitor, a checkpoint stimulator, a chemotherapeutic agent, an immunotherapeutic agent, a platinum agent, an alkylating agent, a taxane, a nucleoside analog, an antimetabolite, a topisomerase inhibitor, an anthracycline, a vinca alkaloid, or any combination thereof.

**[0122]** In some aspects, the tyrosine kinase inhibitor comprises afatinib, erlotinib, dacomitinib, gefitinib, osimertinib, alectinib, brigatinib, ceritinib, crizotinib, lorlatinib, entrectinib, dabrafenib, trametinib, vemurafenib, larotrectinib, or any combination thereof.

**[0123]** In some aspects, the anti-angiogenesis agent comprises an inhibitor of a vascular endothelial growth factor (VEGF), VEGF receptor (VEGFR), platelet-derived growth factor (PDGF), PDGF receptor (PDGFR), angiopoietin (Ang), tyrosine kinase with Ig-like and EGF-like domains (Tie) receptor, hepatocyte growth factor (HGF), tyrosine-protein kinase Met (c-MET), C-type lectin family 14 member A (CLEC14A), multimerin 2 (MMRN2), shock protein 70-1A (HSP70-1A), a epidermal growth factor (EGF), EGF receptor (EGFR), or any combination thereof.

**[0124]** In some aspects, the anti-angiogenesis agent comprises bevacizumab, ramucirumab, aflibercept, tanibirumab, olaratumab, nesvacumab, AMG780, MEDI3617, vanucizumab, rilotumumab, ficlatuzumab, TAK-701, onartuzumab, emibetuzumab, or any combination thereof.

**[0125]** In some aspects, the checkpoint inhibitor comprises a programmed death-1 (PD-1) pathway inhibitor, a cytotoxic T-lymphocyte-associated protein 4 (CTLA-4) inhibitor, a T cell immunoglobulin and ITIM domain (TIGIT) inhibitor, a T cell immunoglobulin and mucin-domain containing-3 (TIM-3) inhibitor, a TIM-1 inhibitor, a TIM-4 inhibitor, a B7-H3 inhibitor, a B7-H4 inhibitor, a B and T cell lymphocyte attenuator (BTLA) inhibitor, a

V-domain Ig suppressor of T cell activation (VISTA) inhibitor, an indoleamine 2,3-dioxygenase (IDO) inhibitor, a nicotinamide adenine dinucleotide phosphate oxidase isoform 2 (NOX2) inhibitor, a killer-cell immunoglobulin-like receptor (KIR) inhibitor, an adenosine A2a receptor (A2aR) inhibitor, a transforming growth factor beta (TGF-β) inhibitor, a phosphoinositide 3-kinase (PI3K) inhibitor, a CD47 inhibitor, a CD48 inhibitor, a CD73 inhibitor, a CD113 inhibitor, a sialic acid-binding immunoglobulin-like lectin-7 (SIGLEC-7) inhibitor, a SIGLEC-9 inhibitor, a SIGLEC-15 inhibitor, a glucocorticoid-induced TNFR-related protein (GITR) inhibitor, a galectin-1 inhibitor, a galectin-9 inhibitor, a carcinoembryonic antigen-related cell adhesion molecule-1 (CEACAM-1) inhibitor, a G protein-coupled receptor 56 (GPR56) inhibitor, a glycoprotein A repetitions predominant (GARP) inhibitor, a 2B4 inhibitor, a programmed death-1 homolog (PD1H) inhibitor, a leukocyte-associated immunoglobulin-like receptor 1 (LAIR1) inhibitor, or any combination thereof.

**[0126]** In some aspects, the PD-1 pathway inhibitor is an anti-PD-L1 antibody.

**[0127]** In some aspects, the anti-PD-L1 antibody is a full-length antibody.

**[0128]** In some aspects, the anti-PD-L1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

**[0129]** In some aspects, the anti-PD-L1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

**[0130]** In some aspects, the anti-PD-L1 antibody is BMS-936559, atezolizumab, durvalumab, avelumab, STI-1014, CX-072, KN035, LY3300054, BGB-A333, ICO 36, CK-301, or comprises an antigen binding portion thereof.

**[0131]** In some aspects, the PD-1 pathway inhibitor is BMS-986189.

**[0132]** In some aspects, the checkpoint inhibitor comprises a CTLA-4 inhibitor.

**[0133]** In some aspects, the CTLA-4 inhibitor is an anti-CTLA-4 antibody.

**[0134]** In some aspects, the anti-CTLA-4 antibody is a full-length antibody.

**[0135]** In some aspects, the anti-CTLA-4 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

[0136] In some aspects, the anti-CTLA-4 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

[0137] In some aspects, the anti-CTLA-4 antibody is ipilimumab, tremelimumab, MK-1308, AGEN-1884, or comprises an antigen binding portion thereof.

[0138] In some aspects, the anti-LAG-3 antibody and the anti-PD-1 antibody are formulated for intravenous administration.

[0139] In some aspects, the checkpoint inhibitor is formulated for intravenous administration.

[0140] In some aspects, the anti-LAG-3 antibody and the anti-PD-1 antibody are formulated separately. In some aspects, the anti-PD-1 antibody is administered before the anti-LAG-3 antibody. In some aspects, the anti-LAG-3 antibody is administered before the anti-PD-1 antibody.

[0141] In some aspects, the anti-LAG-3 antibody and the anti-PD-1 antibody are formulated together.

[0142] In some aspects, the LAG-3 antibody and the anti-PD-1 antibody are administered concurrently.

[0143] In some aspects, the anti-LAG-3 antibody and the anti-PD-1 antibody are administered about once every four weeks.

[0144] The method of claim 182, wherein the anti-LAG-3 antibody and the anti-PD-1 antibody are administered on Day 1 of every four-week cycle.

[0145] In some aspects, the anti-LAG-3 antibody and the anti-PD-1 antibody are administered intravenously from a single intravenous bag for about 30 minutes.

## DETAILED DESCRIPTION OF THE INVENTION

[0146] The present disclosure provides a method of treating a human subject afflicted with a hematological cancer (*e.g.*, a non-Hodgkin lymphoma (NHL) or a Hodgkin lymphoma (HL) such as, but not limited to, classical HL (cHL)), the method comprising administering to the subject a LAG-3 antagonist (*e.g.*, an anti-LAG-3 antibody). In some aspects, the subject is greater than equal to 12 years old and has a weight of greater than or equal to 40 kg, including subjects less than or equal to 30 years old or less than 18 years old. In some aspects, the subject has a weight of less than 40 kg and/or is less than 12 years old. The

present disclosure is also directed to methods of treating a human subject afflicted with a hemtaological cancer comprising an anti-cancer therapy and/or a therapeutic agent in combination with the LAG-3 antagonist, such as a PD-1 pathway inhibitor (*e.g.*, an anti-PD-1 antibody).

## I. Terms

**[0147]** In order that the present disclosure can be more readily understood, certain terms are first defined. As used in this application, except as otherwise expressly provided herein, each of the following terms shall have the meaning set forth below. Additional definitions are set forth throughout the application. It is to be noted that the term "a" or "an" entity refers to one or more of that entity; for example, "a nucleotide sequence," is understood to represent one or more nucleotide sequences. As such, the terms "a" (or "an"), "one or more," and "at least one" can be used interchangeably herein.

**[0148]** The term "and/or" where used herein is to be taken as specific disclosure of each of the two specified features or components with or without the other. Thus, the term "and/or" as used in a phrase such as "A and/or B" herein is intended to include "A and B," "A or B," "A" (alone), and "B" (alone). Likewise, the term "and/or" as used in a phrase such as "A, B, and/or C" is intended to encompass each of the following aspects: A, B, and C; A, B, or C; A or C; A or B; B or C; A and C; A and B; B and C; A (alone); B (alone); and C (alone).

**[0149]** It is understood that wherever aspects are described herein with the language "comprising," otherwise analogous aspects described in terms of "consisting of" and/or "consisting essentially of" are also provided.

**[0150]** The terms "about" or "comprising essentially of" refer to a value or composition that is within an acceptable error range for the particular value or composition as determined by one of ordinary skill in the art, which will depend in part on how the value or composition is measured or determined, *i.e.*, the limitations of the measurement system. For example, "about" or "comprising essentially of" can mean within 1 or more than 1 standard deviation per the practice in the art. Alternatively, "about" or "comprising essentially of" can mean a range of up to 10% or 20% (*i.e.*, ±10% or ±20%). For example, about 3 mg can include any number between 2.7 mg and 3.3 mg (for 10%) or between 2.4 mg and 3.6 mg (for 20%). Furthermore, particularly with respect to biological systems or processes, the terms can mean up to an order of magnitude or up to 5-fold of a value. When particular values or compositions are provided in the application and claims, unless

otherwise stated, the meaning of "about" or "comprising essentially of" should be assumed to be within an acceptable error range for that particular value or composition.

**[0151]** As described herein, any concentration range, percentage range, ratio range or integer range is to be understood to include the value of any integer within the recited range and, when appropriate, fractions thereof (such as one-tenth and one-hundredth of an integer), unless otherwise indicated.

**[0152]** Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this disclosure is related. For example, the Concise Dictionary of Biomedicine and Molecular Biology, Juo, Pei-Show, 2nd ed., 2002, CRC Press; The Dictionary of Cell and Molecular Biology, 5th ed., 2013, Academic Press; and the Oxford Dictionary Of Biochemistry And Molecular Biology, 2006, Oxford University Press, provide one of skill with a general dictionary of many of the terms used in this disclosure.

**[0153]** Units, prefixes, and symbols are denoted in their Système International de Unites (SI) accepted form. Numeric ranges are inclusive of the numbers defining the range.

**[0154]** The headings provided herein are not limitations of the various aspects of the disclosure, which can be had by reference to the specification as a whole. Accordingly, the terms defined immediately below are more fully defined by reference to the specification in its entirety.

**[0155]** The term “hematological” as used herein can be used interchangeably with “hematologic,” and a hematological cancer can be interchangeably referred to as a hematological malignancy.

**[0156]** An "antagonist" shall include, without limitation, any molecule capable of blocking, reducing, or otherwise limiting an interaction or activity of a target molecule (*e.g.*, LAG-3). In some aspects, the antagonist is an antibody. In other aspects, the antagonist comprises a small molecule. The terms "antagonist" and "inhibitor" are used interchangeably herein.

**[0157]** An "antibody" (Ab) shall include, without limitation, a glycoprotein immunoglobulin which binds specifically to an antigen and comprises at least two heavy (H) chains and two light (L) chains interconnected by disulfide bonds. Each H chain comprises a heavy chain variable region (abbreviated herein as $V_H$) and a heavy chain constant region (abbreviated herein as $C_H$). The heavy chain constant region comprises three constant domains, $C_{H1}$, $C_{H2}$ and $C_{H3}$. Each light chain comprises a light chain variable

region (abbreviated herein as $V_L$) and a light chain constant region (abbreviated herein as $C_L$). The light chain constant region comprises one constant domain, $C_L$. The $V_H$ and $V_L$ regions can be further subdivided into regions of hypervariability, termed complementarity determining regions (CDRs), interspersed with regions that are more conserved, termed framework regions (FR). Each $V_H$ and $V_L$ comprises three CDRs and four FRs, arranged from amino-terminus to carboxy-terminus in the following order: FR1, CDR1, FR2, CDR2, FR3, CDR3, FR4. The variable regions of the heavy and light chains contain a binding domain that interacts with an antigen. The constant regions of the antibodies can mediate the binding of the immunoglobulin to host tissues or factors, including various cells of the immune system (*e.g.*, effector cells) and the first component (C1q) of the classical complement system. A heavy chain can have the C-terminal lysine or not. Unless specified otherwise herein, the amino acids in the variable regions are numbered using the Kabat numbering system and those in the constant regions are numbered using the EU system.

**[0158]** An immunoglobulin can derive from any of the commonly known isotypes, including but not limited to IgA, secretory IgA, IgG and IgM. IgG subclasses are also well known to those in the art and include but are not limited to human IgG1, IgG2, IgG3 and IgG4. "Isotype" refers to the antibody class or subclass (*e.g.*, IgM or IgG1) that is encoded by the heavy chain constant region genes. The term "antibody" includes, by way of example, both naturally occurring and non-naturally occurring antibodies; monoclonal and polyclonal antibodies; chimeric and humanized antibodies; human or nonhuman antibodies; wholly synthetic antibodies; single chain antibodies; monospecific antibodies; bispecific antibodies; and multi-specific antibodies. A nonhuman antibody can be humanized by recombinant methods to reduce its immunogenicity in humans. Where not expressly stated, and unless the context indicates otherwise, the term "antibody" also includes an antigen-binding fragment or an antigen-binding portion of any of the aforementioned immunoglobulins, and includes a monovalent and a divalent fragment or portion, that retains the ability to bind specifically to the antigen bound by the whole immunoglobulin. Examples of an "antigen-binding portion" or "antigen-binding fragment" include: (1) a Fab fragment (fragment from papain cleavage) or a similar monovalent fragment consisting of the $V_L$, $V_H$, $L_C$ and $C_{H1}$ domains; (2) a F(ab')2 fragment (fragment from pepsin cleavage) or a similar bivalent fragment comprising two Fab fragments linked by a disulfide bridge at the hinge region; (3) a Fd fragment consisting of the VH and CH1

domains; (4) a Fv fragment consisting of the $V_L$ and $V_H$ domains of a single arm; (5) a single domain antibody (dAb) fragment (Ward *et al.*, (1989) *Nature* 341:544-46), which consists of a $V_H$ domain; (6) a bi-single domain antibody which consists of two $V_H$ domains linked by a hinge (dual-affinity re-targeting antibodies (DARTs)); or (7) a dual variable domain immunoglobulin. Furthermore, although the two domains of the Fv fragment, $V_L$ and $V_H$, are coded for by separate genes, they can be joined, using recombinant methods, by a synthetic linker that enables them to be made as a single protein chain in which the $V_L$ and $V_H$ regions pair to form monovalent molecules (known as single chain Fv (scFv); *see, e.g.*, Bird *et al.* (1988) *Science* 242:423-426; and Huston *et al.* (1988) *Proc. Natl. Acad. Sci. USA* 85:5879-5883).

**[0159]** An "isolated antibody" refers to an antibody that is substantially free of other antibodies having different antigenic specificities (*e.g.*, an isolated antibody that binds specifically to LAG-3 is substantially free of antibodies that do not bind specifically to LAG-3). An isolated antibody that binds specifically to LAG-3 can, however, have cross-reactivity to other antigens, such as LAG-3 molecules from different species. Moreover, an isolated antibody can be substantially free of other cellular material and/or chemicals.

**[0160]** The term "monoclonal antibody" ("mAb") refers to a non-naturally occurring preparation of antibody molecules of single molecular composition, *i.e.*, antibody molecules whose primary sequences are essentially identical, and which exhibits a single binding specificity and affinity for a particular epitope. A mAb is an example of an isolated antibody. MAbs can be produced by hybridoma, recombinant, transgenic or other techniques known to those skilled in the art.

**[0161]** A "human" antibody (HuMAb) refers to an antibody having variable regions in which both the framework and CDR regions are derived from human germline immunoglobulin sequences. Furthermore, if the antibody contains a constant region, the constant region is also derived from human germline immunoglobulin sequences. The human antibodies of the invention can include amino acid residues not encoded by human germline immunoglobulin sequences (*e.g.*, mutations introduced by random or site-specific mutagenesis *in vitro* or by somatic mutation *in vivo*). However, the term "human antibody," as used herein, is not intended to include antibodies in which CDR sequences derived from the germline of another mammalian species, such as a mouse, have been grafted onto

human framework sequences. The terms "human" antibodies and "fully human" antibodies and are used synonymously.

**[0162]** A "humanized antibody" refers to an antibody in which some, most or all of the amino acids outside the CDR domains of a non-human antibody are replaced with corresponding amino acids derived from human immunoglobulins. In one aspect of a humanized form of an antibody, some, most or all of the amino acids outside the CDR domains have been replaced with amino acids from human immunoglobulins, whereas some, most or all amino acids within one or more CDR regions are unchanged. Small additions, deletions, insertions, substitutions or modifications of amino acids are permissible as long as they do not abrogate the ability of the antibody to bind to a particular antigen. A "humanized" antibody retains an antigenic specificity similar to that of the original antibody.

**[0163]** A "chimeric antibody" refers to an antibody in which the variable regions are derived from one species and the constant regions are derived from another species, such as an antibody in which the variable regions are derived from a mouse antibody and the constant regions are derived from a human antibody.

**[0164]** An "anti-antigen" antibody refers to an antibody that binds specifically to the antigen. For example, an anti-LAG-3 antibody binds specifically to LAG-3.

**[0165]** "LAG-3" refers to Lymphocyte Activation Gene-3. The term "LAG-3" includes variants, isoforms, homologs, orthologs and paralogs. For example, antibodies specific for a human LAG-3 protein can, in certain cases, cross-react with a LAG-3 protein from a species other than human. In other aspects, the antibodies specific for a human LAG-3 protein can be completely specific for the human LAG-3 protein and not exhibit species or other types of cross-reactivity, or can cross-react with LAG-3 from certain other species, but not all other species (*e.g.*, cross-react with monkey LAG-3 but not mouse LAG-3). The term "human LAG-3" refers to human sequence LAG-3, such as the complete amino acid sequence of human LAG-3 having GenBank Accession No. NP_002277. The term "mouse LAG-3" refers to mouse sequence LAG-3, such as the complete amino acid sequence of mouse LAG-3 having GenBank Accession No. NP_032505. LAG-3 is also known in the art as, for example, CD223. The human LAG-3 sequence can differ from human LAG-3 of GenBank Accession No. NP_002277 by having, *e.g.*, conserved mutations or mutations in non-conserved regions, and the LAG-3 has substantially the same biological function as

the human LAG-3 of GenBank Accession No. NP_002277. For example, a biological function of human LAG-3 is having an epitope in the extracellular domain of LAG-3 that is specifically bound by an antibody of the instant disclosure or a biological function of human LAG-3 is binding to MHC Class II molecules.

**[0166]** A particular human LAG-3 sequence will generally be at least about 90% identical in amino acid sequence to human LAG-3 of GenBank Accession No. NP_002277 and contains amino acid residues that identify the amino acid sequence as being human when compared to LAG-3 amino acid sequences of other species (*e.g.*, murine). In certain cases, a human LAG-3 can be at least about 95%, or even at least about 96%, at least about 97%, at least about 98%, at least about 99%, or about 100% identical in amino acid sequence to LAG-3 of GenBank Accession No. NP_002277. In certain aspects, a human LAG-3 sequence will display no more than 10 amino acid differences from the LAG-3 sequence of GenBank Accession No. NP_002277. In certain aspects, the human LAG-3 can display no more than 5, or even no more than 4, 3, 2, or 1 amino acid difference from the LAG-3 sequence of GenBank Accession No. NP_002277.

**[0167]** "Programmed Death-1 (PD-1)" refers to an immunoinhibitory receptor belonging to the CD28 family. PD-1 is expressed predominantly on previously activated T cells *in vivo*, and binds to two ligands, PD-L1 and PD-L2. The term "PD-1" as used herein includes human PD-1 (hPD-1), variants, isoforms, and species homologs of hPD-1, and analogs having at least one common epitope with hPD-1. The complete hPD-1 sequence can be found under GenBank Accession No. U64863. "PD-1" and "PD-1 receptor" are used interchangeably herein.

**[0168]** "Cytotoxic T-Lymphocyte Antigen-4 (CTLA-4)" refers to an immunoinhibitory receptor belonging to the CD28 family. CTLA-4 is expressed exclusively on T cells *in vivo*, and binds to two ligands, CD80 and CD86 (also called B7-1 and B7-2, respectively). The term "CTLA-4" as used herein includes human CTLA-4 (hCTLA-4), variants, isoforms, and species homologs of hCTLA-4, and analogs having at least one common epitope with hCTLA-4. The complete hCTLA-4 sequence can be found under GenBank Accession No. AAB59385.

**[0169]** "Programmed Death Ligand-1 (PD-L1)" is one of two cell surface glycoprotein ligands for PD-1 (the other being PD-L2) that downregulate T cell activation and cytokine secretion upon binding to PD-1. The term "PD-L1" as used herein includes human PD-L1

(hPD-L1), variants, isoforms, and species homologs of hPD-L1, and analogs having at least one common epitope with hPD-L1. The complete hPD-L1 sequence can be found under GenBank Accession No. Q9NZQ7.

**[0170]** "Programmed Death Ligand-2 (PD-L2)" as used herein includes human PD-L2 (hPD-L2), variants, isoforms, and species homologs of hPD-L2, and analogs having at least one common epitope with hPD-L2. The complete hPD-L2 sequence can be found under GenBank Accession No. Q9BQ51.

**[0171]** A "patient" as used herein includes any patient who is afflicted with a hematological cancer (*e.g.*, a Hodgkin or non-Hodgkin lymphoma). The terms "subject" and "patient" are used interchangeably herein.

**[0172]** "Administering" refers to the physical introduction of a therapeutic agent to a subject (*e.g.*, a composition or formulation comprising the therapeutic agent), using any of the various methods and delivery systems known to those skilled in the art. Exemplary routes of administration include intravenous, intramuscular, subcutaneous, intraperitoneal, spinal or other parenteral routes of administration, for example by injection or infusion. The phrase "parenteral administration" as used herein means modes of administration other than enteral and topical administration, usually by injection, and includes, without limitation, intravenous, intramuscular, intraarterial, intrathecal, intralymphatic, intralesional, intracapsular, intraorbital, intracardiac, intradermal, intraperitoneal, transtracheal, subcutaneous, subcuticular, intraarticular, subcapsular, subarachnoid, intraspinal, epidural and intrasternal injection and infusion, as well as in vivo electroporation. In some aspects, the formulation is administered via a non-parenteral route, in some aspects, orally. Other non-parenteral routes include a topical, epidermal or mucosal route of administration, for example, intranasally, vaginally, rectally, sublingually or topically. Administering can also be performed, for example, once, a plurality of times, and/or over one or more extended periods.

**[0173]** "Treatment" or "therapy" of a subject refers to any type of intervention or process performed on, or the administration of an active agent to, the subject with the objective of reversing, alleviating, ameliorating, inhibiting, slowing down progression, development, severity or recurrence of a symptom, complication or condition, or biochemical indicia associated with a disease. Response Evaluation Criteria In Solid Tumors (RECIST) is a measure for treatment efficacy and are established rules that define when tumors respond,

stabilize, or progress during treatment. RECIST 1.1 is the current guideline to solid tumor measurement and definitions for objective assessment of change in tumor size for use in adult and pediatric cancer clinical trials.

**[0174]** As used herein, "effective treatment" refers to treatment producing a beneficial effect, e.g., amelioration of at least one symptom of a disease or disorder. A beneficial effect can take the form of an improvement over baseline, *i.e.*, an improvement over a measurement or observation made prior to initiation of therapy according to the method. A beneficial effect can also take the form of arresting, slowing, retarding, or stabilizing of a deleterious progression of a marker of solid tumor. Effective treatment can refer to alleviation of at least one symptom of a solid tumor. Such effective treatment can, *e.g.*, reduce patient pain, reduce the size and/or number of lesions, can reduce or prevent metastasis of a tumor, and/or can slow tumor growth.

**[0175]** The term "effective amount" refers to an amount of an agent that provides the desired biological, therapeutic, and/or prophylactic result. That result can be reduction, amelioration, palliation, lessening, delaying, and/or alleviation of one or more of the signs, symptoms, or causes of a disease, or any other desired alteration of a biological system. In reference to solid tumors, an effective amount comprises an amount sufficient to cause a tumor to shrink and/or to decrease the growth rate of the tumor (such as to suppress tumor growth) or to delay other unwanted cell proliferation. In some aspects, an effective amount is an amount sufficient to prevent or delay tumor recurrence. An effective amount can be administered in one or more administrations. The effective amount of the drug or composition can: (i) reduce the number of cancer cells; (ii) reduce tumor size; (iii) inhibit, retard, slow to some extent and can stop cancer cell infiltration into peripheral organs; (iv) inhibit (*i.e.*, slow to some extent and can stop tumor metastasis; (v) inhibit tumor growth; (vi) prevent or delay occurrence and/or recurrence of tumor; and/or (vii) relieve to some extent one or more of the symptoms associated with the cancer. In one example, an "effective amount" is the amount of anti-LAG-3 antibody alone or the amount of anti-LAG-3 antibody and the amount an additional therapeutic agent (*e.g.*, anti-PD-1 antibody), in combination, clinically proven to affect a significant decrease in cancer or slowing of progression of cancer, such as an advanced solid tumor.

**[0176]** As used herein, the terms "fixed dose," "flat dose," and "flat-fixed dose" are used interchangeably and refer to a dose that is administered to a patient without regard for the

weight or body surface area (BSA) of the patient. The fixed or flat dose is therefore not provided as a mg/kg dose, but rather as an absolute amount of the agent (*e.g.*, an amount in µg or mg).

**[0177]** The use of the term "fixed dose combination" with regard to a composition of the invention means that two or more different inhibitors as described herein (*e.g.*, an anti-LAG-3 antibody and an anti-PD-1 antibody) in a single composition are present in the composition in particular (fixed) ratios with each other. In some aspects, the fixed dose is based on the weight (*e.g.*, mg) of the inhibitors. In certain aspects, the fixed dose is based on the concentration (*e.g.*, mg/ml) of the inhibitors. In some aspects, the ratio is at least about 1:1, about 1:2, about 1:3, about 1:4, about 1:5, about 1:6, about 1:7, about 1:8, about 1:9, about 1:10, about 1:15, about 1:20, about 1:30, about 1:40, about 1:50, about 1:60, about 1:70, about 1:80, about 1:90, about 1:100, about 1:120, about 1:140, about 1:160, about 1:180, about 1:200, about 200:1, about 180:1, about 160:1, about 140:1, about 120:1, about 100:1, about 90:1, about 80:1, about 70:1, about 60:1, about 50:1, about 40:1, about 30:1, about 20:1, about 15:1, about 10:1, about 9:1, about 8:1, about 7:1, about 6:1, about 5:1, about 4:1, about 3:1, or about 2:1 mg first inhibitor to mg second inhibitor. For example, the 3:1 ratio of a first inhibitor and a second inhibitor can mean that a vial can contain about 480 mg of the first inhibitor and 160 mg of the second inhibitor or about 6 mg/ml of the first inhibitor and 2 mg/ml of the second inhibitor.

**[0178]** The term "weight based dose" as referred to herein means that a dose that is administered to a patient is calculated based on the weight of the patient.

**[0179]** "Dosing interval," as used herein, means the amount of time that elapses between multiple doses of a formulation disclosed herein being administered to a subject. Dosing interval can thus be indicated as ranges.

**[0180]** The term "dosing frequency" as used herein refers to the frequency of administering doses of a formulation disclosed herein in a given time. Dosing frequency can be indicated as the number of doses per a given time, *e.g.*, once a week or once in two weeks, etc.

**[0181]** The terms "about once a week," "once about every week," "once about every two weeks," or any other similar dosing interval terms as used herein means approximate number, and "about once a week" or "once about every week" can include every seven days ± two days, *i.e.,* every five days to every nine days. The dosing frequency of "once a week" thus can be every five days, every six days, every seven days, every eight days, or every

nine days. "Once about every three weeks" can include every 28 days ± 3 days, *i.e.*, every 25 days to every 31 days. Similar approximations apply, for example, to once about every two weeks, once about every four weeks, once about every five weeks, once about every six weeks, once about every seven weeks, once about every eight weeks, once about every nine weeks, once about every ten weeks, once about every eleven weeks, and once about every twelve weeks. In some aspects, a dosing interval of once about every six weeks or once about every twelve weeks means that the first dose can be administered any day in the first week, and then the next dose can be administered any day in the sixth or twelfth week, respectively. In other aspects, a dosing interval of once about every six weeks or once about every twelve weeks means that the first dose is administered on a particular day of the first week (*e.g.*, Monday) and then the next dose is administered on the same day of the sixth or twelfth weeks (*i.e.*, Monday), respectively.

**[0182]** An "adverse event" (AE) as used herein is any unfavorable and generally unintended or undesirable sign (including an abnormal laboratory finding), symptom, or disease associated with the use of a medical treatment. For example, an adverse event can be associated with activation of the immune system or expansion of immune system cells (*e.g.*, T cells) in response to a treatment. A medical treatment can have one or more associated AEs and each AE can have the same or different level of severity.

**[0183]** The term "tumor" as used herein refers to any mass of tissue that results from excessive cell growth or proliferation, either benign (non-cancerous) or malignant (cancerous), including pre-cancerous lesions.

**[0184]** The term "biological sample" as used herein refers to biological material isolated from a subject. The biological sample can contain any biological material suitable for analysis, for example, by sequencing nucleic acids in the tumor (or circulating tumor cells) and identifying a genomic alteration in the sequenced nucleic acids. The biological sample can be any suitable biological tissue or fluid such as, for example, tumor tissue, blood, blood plasma, and serum. The biological sample can be a test tissue sample (*e.g.*, a tissue sample comprising tumor cells and tumor-infiltrating inflammatory cells). In one aspect, the sample is a tumor tissue biopsy, *e.g.*, a formalin-fixed, paraffin-embedded (FFPE) tumor tissue or a fresh-frozen tumor tissue or the like. In another aspect, the biological sample is a liquid biopsy that, in some aspects, comprises one or more of blood, serum, plasma, circulating tumor cells, exoRNA, ctDNA, and cfDNA.

**[0185]** By way of example, an "anti-cancer agent" promotes cancer regression in a subject. In preferred aspects, a therapeutically effective amount of the agent promotes cancer regression to the point of eliminating the cancer. "Promoting cancer regression" means that administering an effective amount of the anti-cancer agent, alone or in combination with another agent, results in a reduction in tumor growth or size, necrosis of the tumor, a decrease in severity of at least one disease symptom, an increase in frequency and duration of disease symptom-free periods, or a prevention of impairment or disability due to the disease affliction. In addition, the terms "effective" and "effectiveness" with regard to a treatment includes both pharmacological effectiveness and physiological safety. Pharmacological effectiveness refers to the ability of the agent to promote cancer regression in the patient. Physiological safety refers to the level of toxicity, or other adverse physiological effects at the cellular, organ and/or organism level (adverse effects) resulting from administration of the agent.

**[0186]** By way of example for the treatment of tumors, a therapeutically effective amount of an anti-cancer agent can inhibit cell growth or tumor growth by at least about 20%, at least about 40%, at least about 60%, or at least about 80% relative to untreated subjects. In other aspects of the disclosure, tumor regression can be observed and continue for a period of at least about 20 days, more preferably at least about 40 days, or at least about 60 days. Notwithstanding these measurements of therapeutic effectiveness, evaluation of immunotherapeutic drugs must also make allowance for immune-related response patterns.

**[0187]** As used herein, an "immuno-oncology" therapy or an "I-O" or "IO" therapy refers to a therapy that comprises utilizing an immune response to target and treat a tumor in a subject. As such, as used herein, an I-O therapy is a type of anti-cancer therapy. In some aspects, an I-O therapy comprises administering an antibody to a subject. In some aspects, an I-O therapy comprises administering to a subject an immune cell, *e.g.*, a T cell, *e.g.*, a modified T cell, *e.g.*, a T cell modified to express a chimeric antigen receptor or a particular T cell receptor. In some aspects, the I-O therapy comprises administering a therapeutic vaccine to a subject. In some aspects, the I-O therapy comprises administering a cytokine or a chemokine to a subject. In some aspects, the I-O therapy comprises administering an interleukin to a subject. In some aspects, the I-O therapy comprises administering an interferon to a subject. In some aspects, the I-O therapy comprises administering a colony stimulating factor to a subject.

**[0188]** An "immune response" refers to the action of a cell of the immune system (for example, T lymphocytes, B lymphocytes, natural killer (NK) cells, macrophages, eosinophils, mast cells, dendritic cells and neutrophils) and soluble macromolecules produced by any of these cells or the liver (including antibodies, cytokines, and complement) that results in selective targeting, binding to, damage to, destruction of, and/or elimination from a vertebrate's body of invading pathogens, cells or tissues infected with pathogens, cancerous or other abnormal cells, or, in cases of autoimmunity or pathological inflammation, normal human cells or tissues.

**[0189]** A "tumor-infiltrating inflammatory cell" or "tumor-associated inflammatory cell" is any type of cell that typically participates in an inflammatory response in a subject and which infiltrates tumor tissue. Such cells include tumor-infiltrating lymphocytes (TILs), macrophages, monocytes, eosinophils, histiocytes and dendritic cells.

**[0190]** The term "LAG-3 positive" or "LAG-3 expression positive," relating to LAG-3 expression, refers to tumor tissue (*e.g.*, a test tissue sample) that is scored as expressing LAG-3 based on the proportion (*i.e.*, percentage) of immune cells (*e.g.*, tumor-infiltrating lymphocytes such as CD8+ T cells) expressing LAG-3 (*e.g.*, greater than or equal to 1% expression) or the proportion (*i.e.*, percentage) of nucleated cells expressing LAG-3 (*i.e.*, the immune cells that express LAG-3 as a proportion of total nucleated cells, *e.g.*, greater than or equal to 1% expression).

**[0191]** "LAG-3 negative" or "LAG-3 expression negative," refers to tumor tissue (*e.g.*, a test tissue sample) that is not scored as expressing LAG-3 (*e.g.*, less than 1% LAG-3 expression).

**[0192]** The term "PD-1 positive" or "PD-1 expression positive," relating to PD-1 expression, refers to tumor tissue (*e.g.*, a test tissue sample) that is scored as expressing PD-1 based on the proportion (*i.e.*, percentage) of immune cells (*e.g.*, tumor-infiltrating lymphocytes such as CD8+ T cells) expressing PD-1 (*e.g.*, greater than or equal to 1% expression) or the proportion (*i.e.*, percentage) of nucleated cells expressing PD-1 (*i.e.*, the immune cells that express PD-1 as a proportion of total nucleated cells, *e.g.*, greater than or equal to 1% expression).

**[0193]** "PD-1 negative" or "PD-1 expression negative," refers to tumor tissue (*e.g.*, a test tissue sample) that is not scored as expressing PD-1 (*e.g.*, less than 1% PD-1 expression).

[0194] The term "PD-L1 positive" or "PD-L1 expression positive," relating to cell surface PD-L1 expression, refers to tumor tissue (*e.g.*, a test tissue sample) that is scored as expressing PD-L1 based on the proportion (*i.e.*, percentage) of tumor cells expressing PD-L1 (*e.g.*, greater than or equal to 1% expression) or the proportion (*i.e.*, percentage) of nucleated cells expressing PD-L1 (*i.e.*, the tumor cells that express PD-L1 as a proportion of total nucleated cells, *e.g.*, greater than or equal to 1% expression).

[0195] The term "PD-L1 negative" or "PD-L1 expression negative" refers to tumor tissue (*e.g.*, a test tissue sample) that is not scored as expressing PD-L1 (*e.g.*, less than 1% expression).

[0196] Various aspects of the invention are described in further detail in the following subsections.

## II. Methods of the Disclosure

[0197] Provided herein are methods of treating a human subject afflicted with a hematological cancer, the methods comprising administering to the subject a LAG-3 antagonist (*e.g.*, an anti-LAG-3 antibody) alone or in combination with one or more additional therapeutic agents (*e.g.*, a PD-1 pathway inhibitor such as an anti-PD-1 antibody), wherein the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

[0198] In some aspects, the subject is less than or equal to about 100, about 95, about 90, about 85, about 80, about 75, about 70, about 65, about 60, about 55, about 50, about 45, about 40, about 35, about 30, about 25, about 20, about 19, about 18, about 17, about 16, about 15, about 14, or about 13 years old.

[0199] In some aspects, the subject is an adolescent or a young adult.

[0200] In some aspects, the subject is greater than or equal to about 15, about 20, about 25, about 30, about 35, about 40, about 45, or about 50 years old to less than or equal to about 100, about 95, about 90, about 85, about 80, about 75, about 70, about 65, or about 60 years old (*e.g.*, greater than or equal to about 15 years old to less than or equal to about 35 years old, greater than or equal to about 15 years old to less than or equal to about 20 years old, or greater than or equal to about 50 years old to less than or equal to about 60 years old).

[0201] In some aspects, the subject has a weight of greater than or equal to about 45, about 50, about 55, about 60, about 65, about 70, about 75, about 80, about 85, about 90, about 95, about 100, about 110, about 120, about 130, about 140, or about 150 kg.

[0202] Provided herein are methods of treating a human subject afflicted with a hematological cancer, the methods comprising administering to the subject a LAG-3 antagonist (*e.g.*, an anti-LAG-3 antibody) alone or in combination with one or more additional therapeutic agents (*e.g.*, a PD-1 pathway inhibitor such as an anti-PD-1 antibody), wherein the subject has a weight of less than 40 kg.

[0203] In some aspects, the subject is less than or equal to about 100, about 95, about 90, about 85, about 80, about 75, about 70, about 65, about 60, about 55, about 50, about 45, about 40, about 35, about 30, about 25, about 20, about 19, about 18, about 17, about 16, about 15, about 14, about 13, about 12, about 10, about 9, about 8, about 7, about 6, about 5, about 4, about 3, about 2, or about 1 years old.

[0204] In some aspects, the subject is less than or equal to about 12, about 11, about 10, about 9, about 8, about 7, or about 6 months old.

[0205] In some aspects, the subject is a newborn, an infant, a child, an adolescent, or a young adult.

[0206] In some aspects, the subject is greater than or equal to about 1, about 2, about 3, about 4, about 5, about 6, about 7, about 8, about 9, or about 10 years old to less than or equal to about 100, about 95, about 90, about 85, about 80, about 75, about 70, about 65, about 60 years old, about 55, about 50, about 45, about 40, about 35, about 30, about 25, about 20, about 19, about 18, about 17, about 16, about 15, about 14, about 13, about 12, or about 11 years old (*e.g.*, greater than or equal to about 5 to less than or equal to about 15 years old).

[0207] In some aspects, the subject is greater than or equal to about 10, about 11, about 12, about 13, about 14, or about 15 years old to less than or equal to about 100, about 95, about 90, about 85, about 80, about 75, about 70, about 65, about 60, about 55, about 50, about 45, about 40, about 35, about 30, about 25, about 20, about 19, about 18, about 17, or about 16 years old (*e.g.*, greater than or equal to about 15 years old to less than or equal to about 35 years old, greater than or equal to about 15 years old to less than or equal to about 20 years old, or greater than or equal to about 50 years old to less than or equal to about 60 years old).

[0208] In some aspects, the subject has a weight of less than or equal to about 35, about 30, about 25, about 20, about 15, about 10, or about 5 kg.

[0209] Provided herein are methods of treating a human subject afflicted with a hematological cancer, the methods comprising administering to the subject a LAG-3 antagonist (*e.g.*, an anti-LAG-3 antibody) alone or in combination with one or more additional therapeutic agents (*e.g.*, a PD-1 pathway inhibitor such as an anti-PD-1 antibody), wherein the subject is less than 12 years old.

[0210] In some aspects, the subject is less than or equal to 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, or 1 years old.

[0211] In some aspects, the subject is less than or equal to about 12, about 11, about 10, about 9, about 8, about 7, or about 6 months old.

[0212] In some aspects, the subject is a newborn, an infant, or a child.

[0213] In some aspects, the methods of the disclosure comprise administering to the subject a LAG-3 antagonist (*e.g.*, an anti-LAG-3 antibody, alone or in combination with one or more additional therapeutic agents (*e.g.*, a PD-1 pathway inhibitor such as an anti-PD-1 antibody)) based on the subject's performance status. Performance status can be indicated by any one or more systems in the art.

[0214] In some aspects, the performance status is indicated by Karnofsky performance status, Lansky play-performance status, and/or Eastern Cooperative Oncology Group performance status (ECOG PS), which utilize standardized criteria for measuring how disease impacts a patient's daily living abilities.

[0215] Criteria for scoring Karnofsky performance status and Lansky play-performance status are shown in Table 1. Karnofsky performance status can be determined, *e.g.*, for subjects greater than 16 years old, while Lansky play-performance status can be determined, *e.g.*, for subjects less than or equal to 16 years old.

**Table 1: Karnofsky and Lansky Criteria**

| STATUS | | SCORE |
|---|---|---|
| **Karnofsky** | **Lansky** | **Karnofsky Performance Score or Lansky Play-Performance Score** |
| Normal, no complaints | Fully active, normal | 100 |
| Able to carry on normal activities; minor signs or symptoms of disease | Minor restrictions in physically strenuous activity | 90 |
| Normal activity with effort; some signs or symptoms of disease | Active, but tires more quickly | 80 |

| | | |
|---|---|---|
| Cares for self. Unable to carry on normal activity or to do active work | Substantial restriction of, and less time spent, in play activity | 70 |
| Requires occasional assistance, but able to care for most of his needs | Out of bed, but minimal active play; keeps busy with quiet activities | 60 |
| Requires considerable assistance and frequent medical care | Gets dressed, but inactive much of day; no active play, able to participate in quiet play | 50 |
| Disabled. Requires special care and assistance | Mostly in bed; participates in some quiet activities | 40 |
| Severely disabled. Hospitalization indicated though death non imminent | In bed; needs assistance even for quiet play | 30 |
| Very sick. Hospitalization necessary. Active supportive treatment necessary | Often sleeping; play limited to passive activities | 20 |
| Moribund | No play; does not get out of bed | 10 |

**[0216]** In some aspects, the subject is greater than about 16 years old and has a Karnofsky performance score of greater than or equal to 10, 20, 30, 40, 50, 60, 70, 80, or 90. In some aspects, the subject is greater than about 16 years old has a Karnofsky performance score of 100.

**[0217]** In some aspects, the subject is less than or equal to about 16 years old and has a Lansky play-performance score of greater than or equal to 10, 20, 30, 40, 50, 60, 70, 80, or 90. In some aspects, the subject has a Lansky play-performance score of 100.

**[0218]** Example definitions for ECOG PS include: "0" for a patient who is fully active and able to carry on all pre-disease performance without restriction; "1" for a patient who is restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature; "2" for a patient who is ambulatory and capable of all self-care, up and about more than 50% of waking hours, but unable to carry out any work activities; "3" for a patient who is capable of only limited self-care and is confined to a bed or chair more than 50% of waking hours; and "4" for a patient who is completely disabled, cannot carry on any self-care, and is totally confined to bed or chair.

**[0219]** In some aspects the subject has an ECOG PS of less than or equal to 4, 3, 2, or 1. In some aspects, the subject has an ECOG PS of 0.

**[0220]** In some aspects, the method is a first line (1L) therapy.

[0221] In some aspects, the method is a second line (2L) therapy.

[0222] In some aspects, the method is a third line (3L) therapy.

[0223] In some aspects, the subject has progressed on a prior therapy.

[0224] In some aspects, the subject has not received a prior systemic therapy for cancer, the subject has not received a prior systemic therapy for hematological cancer, or the subject has not received a prior systemic therapy for advanced or metastatic hematological cancer.

[0225] In some aspects, the subject is naïve to prior immuno-oncology (I-O) therapy. In some aspects, the subject has never received I-O therapy, has received I-O therapy for a cancer other than hematological cancer, or has received I-O therapy for a previous hematological cancer but not a current hematological cancer. In some aspects, the subject is naïve to prior I-O therapy, the subject is naïve to prior I-O therapy for hematological cancer, or the hematological cancer is naïve to prior I-O therapy. In some aspects, the prior I-O therapy is an antibody. In some aspects, the antibody binds to a checkpoint inhibitor. In some aspects, the prior I-O therapy is an anti-PD-1 antibody, an anti-PD-L1 antibody, an anti-CTLA-4 antibody, or a combination thereof.

[0226] In some aspects, the LAG-3 antagonist (*e.g.*, an anti-LAG-3 antibody, alone or in combination with one or more additional therapeutic agents (*e.g.*, a PD-1 pathway inhibitor such as an anti-PD-1 antibody)) is administered prior to high-dose chemotherapy (HDCT), autologous stem cell transplantation (ASCT), or a combination thereof.

[0227] In some aspects, the subject is naïve to prior HDCT, ASCT, or a combination thereof.

[0228] In some aspects, the hematological cancer is unresectable, advanced, recurrent, refractory, and/or metastatic.

[0229] In some aspects, the hematological cancer is recurrent or refractory.

[0230] In some aspects, the hematological cancer is metastatic.

[0231] In some aspects, the hematological cancer comprises a leukemia, lymphoma, or myeloma.

[0232] In some aspects, the hematological cancer comprises a B-cell lymphoma (*e.g.*, a mature B-cell lymphoma), T-cell lymphoma, or natural killer-cell lymphoma

[0233] In some aspects, the hematological cancer comprises a Hodgkin lymphoma.

**[0234]** Hodgkin lymphoma (HL) has a bimodal age distribution, with peak incidence at 15-34 years of age and again at 50-60 years. A significant proportion of cases occur in the pediatric age group, the majority of which present in adolescents, and a minority of the cases in patients younger than 10 years of age.

**[0235]** In some aspects, the Hodgkin lymphoma comprises nodular lymphocyte-predominant Hodgkin lymphoma.

**[0236]** In some aspects, the Hodgkin lymphoma comprises a classical Hodgkin lymphoma (cHL). cHL can be characterized by rare, malignant Reed Sternberg cells surrounded by an extensive but ineffective inflammatory immune cell infiltrate.

**[0237]** In some aspects, the cHL comprises nodular sclerosis Hodgkin lymphoma, mixed cellularity Hodgkin lymphoma, lymphocyte-depleted Hodgkin lymphoma, or lymphocyte-rich classical Hodgkin lymphoma.

**[0238]** In some aspects, the cHL is a recurrent or refractory cHL characterized by early relapse, B-symptoms at relapse, extensive disease at a contraindicated radiotherapy field, relapse at a prior radiotherapy field, or a combination thereof.

**[0239]** In some aspects, the cHL is staged according to the Lugano 2014 Classification. *See*, *e.g.*, Cheson *et al.*, *J. Clin. Oncol. 32*(27):3059-3067 (2014).

**[0240]** In some aspects, the cHL is stage IIB with bulky disease, IIIA with E-lesions with or without bulky disease, IIIB, or IV, where E-lesions are defined as localized involvement of extralymphatic tissue (by contiguous growth from, or in close anatomic relation to, an involved lymph node) that is treatable by irradiation.

**[0241]** In some aspects, the hematological cancer comprises a non-Hodgkin lymphoma (NHL).

**[0242]** In some aspects, the NHL comprises diffuse large B-cell lymphoma, anaplastic large cell lymphoma, Burkitt lymphoma, Burkitt-like lymphoma, lymphoblastic lymphoma, mantle cell lymphoma, peripheral T-cell lymphoma, follicular lymphoma, cutaneous T-cell lymphoma, lymphoplasmactyic lymphoma, marginal zone lymphoma, mucosa-associated lymphoid tissue lymphoma, central nervous system lymphoma, chronic lymphocytic leukemia, small lymphocytic lymphoma, primary mediastinal large B-cell lymphoma, adult T-cell lymphoma, angioimmunoblastic T-cell lymphoma, Waldenström macroglobulinemia, mycosis fungoides, or Sézary syndrome.

[0243] NHLs constitute 10% to 12% of cancers and represent nearly two thirds of the lymphomas diagnosed in children. Approximately 70% of children with NHL present with advanced disease and/or have metastatic involvement, including bone marrow, central nervous system (CNS), and/or bone, as opposed to NHL in adults, which tends to present as lower intermediate-grade. NHL of childhood and adolescence fall into 3 main histological categories: mature B-cell (Burkitt and Burkitt-like lymphomas [30%] and diffuse large B-cell lymphoma [DLBCL; 10 to 20%]), lymphoblastic lymphoma (20%), and anaplastic large cell lymphoma (10%). Childhood NHL occurs most commonly in the second decade of life and infrequently at under than 3 years of age. In children, NHLs consist predominantly of mature, aggressive B-cell lymphomas, with Burkitt lymphoma being most common in 5- to 14-year-olds and DLBCL predominating in 15- to 19-year-olds.

[0244] In some aspects, the NHL comprises a Burkitt lymphoma, Burkitt-like lymphoma, diffuse large B-cell lymphoma, lymphoblastic lymphoma, or anaplastic large cell lymphoma.

[0245] In some aspects, the NHL is a recurrent or refractory NHL characterized by two or more of a decreased performance status, elevated serum lactate dehydrogenase, and stage III or IV. In some aspects, the NHL is staged according to the Lugano 2014 Classification.

[0246] In some aspects, the subject is greater than about 16 years old and has a Karnofsky performance score of less than or equal to 80, 70, 60, 50, 40, 30, or 20.

[0247] In some aspects, the subject is less than or equal to about 16 years old and has a Lansky play-performance score of less than or equal to 80, 70, 60, 50, 40, 30, or 20.

[0248] In some aspects, the NHL is stage III or IV.

[0249] In some aspects, the hematological cancer comprises acute myeloid leukemia, chronic lymphocytic leukemia, hairy cell leukemia, acute lymphocytic leukemia, acute promyelocytic leukemia, chronic myeloid leukemia, chronic myelomonocytic leukemia, juvenile myelomonocytic leukemia, myeloproliferative neoplasms, systemic mastocytosis, prolymphocytic leukemia, large granular lymphocytic leukemia, or blastic plasmacytoid dendritic cell neoplasm.

[0250] In some aspects, a method of the disclosure increases duration of progression-free survival (PFS), duration of response (DOR), duration of complete metabolic response

(DoCMR), objective response rate (ORR), overall survival (OS), or any combination thereof as compared to a standard of care therapy and/or a prior therapy.

**[0251]** In some aspects, a response is characterized according to the Lugano 2014 lymphoma response criteria.

**[0252]** In some aspects, a method of the disclosure reduces the size of a tumor, inhibits growth of a tumor, eliminates a tumor from the subject, prevents relapse of hematological cancer, induces remission of hematological cancer, provides a complete response or partial response, or any combination thereof.

**[0253]** In some aspects, one or more immune cells in tumor tissue from the subject express LAG-3 (*i.e.*, tumor tissue from the patient is LAG-3 positive) and/or one or more tumor cells in tumor tissue from the subject express PD-L1 (*i.e.*, tumor tissue from the patient is PD-L1 positive). In some aspects, one or more immune cells in tumor tissue from the subject express LAG-3. In some aspects, at least about 1%, at least about 2%, at least about 3%, at least about 4%, at least about 5%, at least about 7%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the immune cells express LAG-3. In some aspects, at least about 1% of the immune cells express LAG-3. In some aspects, greater than about 1% of the immune cells express LAG-3. In some aspects, at least about 5% of the immune cells express LAG-3. In some aspects, the immune cells are tumor-infiltrating lymphocytes. In some aspects, the tumor-infiltrating lymphocytes are $CD8^+$ cells. In some aspects, at least about 1%, at least about 2%, at least about 3%, at least about 4%, at least about 5%, at least about 7%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of nucleated cells in tumor tissue from the subject express LAG-3 (*i.e.*, the immune cells that express LAG-3 as a proportion of total nucleated cells). In some aspects, at least about 1% of the nucleated cells express LAG-3. In some aspects, greater than about 1% of the nucleated cells express LAG-3. In some aspects, at least about 5% of the nucleated cells express LAG-3. In some aspects, one or more tumor cells in tumor tissue from the subject express PD-L1. In some aspects, at least about 1%, at least about 2%, at least about 3%, at least about 4%, at least about 5%, at least

about 7%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the tumor cells express PD-L1. In some aspects, at least about 1% of the tumor cells express PD-L1. In some aspects, at least about 1% of the tumor cells express PD-L1. In some aspects, greater than about 1% of the tumor cells express PD-L1. In some aspects, at least about 5% of the tumor cells express PD-L1. In some aspects, at least about 1%, at least about 2%, at least about 3%, at least about 4%, at least about 5%, at least about 7%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of nucleated cells in tumor tissue from the subject express PD-L1 (*i.e.*, the tumor cells that express PD-L1 as a proportion of total nucleated cells). In some aspects, at least about 1% of the nucleated cells in tumor tissue from the subject express PD-L1. In some aspects, at least about 1% of the nucleated cells in tumor tissue from the subject express PD-L1. In some aspects, greater than about 1% of the nucleated cells in tumor tissue from the subject express PD-L1. In some aspects, at least about 5% of the nucleated cells in tumor tissue from the subject express PD-L1. In some aspects, any of the values of "at least about X%" is "≥X%").

**[0254]** In some aspects, one or more immune cells in tumor tissue from the patient does not express LAG-3 (*i.e.*, tumor tissue from the patient is LAG-3 negative). In some aspects, the tumor tissue is LAG-3 negative when less than about 1% of the immune cells express LAG-3. In some aspects, the tumor tissue is LAG-3 negative when less than about 1% of nucleated cells express LAG-3.

**[0255]** In some aspects, one or more immune cells in tumor tissue from the patient does not express PD-1 (*i.e.*, tumor tissue from the patient is PD-1 negative). In some aspects, the tumor tissue is PD-1 negative when less than about 1% of the immune cells express PD-1. In some aspects, the tumor tissue is PD-1 negative when less than about 1% of nucleated cells express PD-1.

**[0256]** In some aspects, one or more tumor cells in tumor tissue from the patient does not express PD-L1 (*i.e.*, tumor tissue from the patient is PD-L1 negative). In some aspects, the tumor tissue is PD-L1 negative when less than about 1% of the tumor cells express PD-L1.

In some aspects, the tumor tissue is PD-L1 negative when less than about 1% of nucleated cells express PD-L1.

**[0257]** In some aspects, LAG-3, PD-1, and/or PD-L1 expression in the subject's tumor tissue is determined from a test tissue sample. In some aspects, a test tissue sample includes, but is not limited to, any clinically relevant tissue sample, such as a tumor biopsy, a core biopsy, an incisional biopsy, an excisional biopsy, a surgical specimen, a fine needle aspirate, or a sample of bodily fluid, such as blood, plasma, serum, lymph, ascites fluid, cystic fluid, or urine. In some aspects, the test tissue sample is from a primary tumor. In some aspects, the test tissue sample is from a metastasis. In some aspects, test tissue samples are from multiple time points, for example, before treatment, during treatment, and/or after treatment. In some aspects, test tissue samples are from different locations in the subject, for example, from a primary tumor and from a metastasis.

**[0258]** In some aspects, the test tissue sample is a paraffin-embedded fixed tissue sample. In some aspects, the test tissue sample is a formalin-fixed paraffin embedded (FFPE) tissue sample. In some aspects, the test tissue sample is a fresh tissue (*e.g.*, tumor) sample. In some aspects, the test tissue sample is a frozen tissue sample. In some aspects, the test tissue sample is a fresh frozen (FF) tissue (*e.g.*, tumor) sample. In some aspects, the test tissue sample is a cell isolated from a fluid. In some aspects, the test tissue sample comprises circulating tumor cells (CTCs). In some aspects, the test tissue sample comprises tumor-infiltrating lymphocytes (TILs). In some aspects, the test tissue sample comprises tumor cells and tumor-infiltrating lymphocytes (TILs). In some aspects, the test tissue sample comprises circulating lymphocytes. In some aspects, the test tissue sample is an archival tissue sample. In some aspects, the test tissue sample is an archival tissue sample with known diagnosis, treatment, and/or outcome history. In some aspects, the sample is a block of tissue. In some aspects, the test tissue sample is dispersed cells. In some aspects, the sample size is from about 1 cell to about $1 \times 10^6$ cells or more. In some aspects, the sample size is about 1 cell to about $1 \times 10^5$ cells. In some aspects, the sample size is about 1 cell to about 10,000 cells. In some aspects, the sample size is about 1 cell to about 1,000 cells. In some aspects, the sample size is about 1 cells to about 100 cells. In some aspects, the sample size is about 1 cell to about 10 cells. In some aspects, the sample size is a single cell.

**[0259]** In some aspects, LAG-3, PD-1, and/or PD-L1 expression is assessed by performing an assay to detect the presence of LAG-3, PD-1, and/or PD-L1 RNA, respectively. In some

aspects, the presence of LAG-3, PD-1, and/or PD-L1 RNA is detected by RT-PCR, *in situ* hybridization or RNase protection.

**[0260]** In some aspects, LAG-3, PD-1, and/or PD-L1 expression is assessed by performing an assay to detect the presence of LAG-3, PD-1, and/or PD-L1 polypeptide, respectively. In some aspects, the presence of LAG-3, PD-1, and/or PD-L1 polypeptide is detected by immunohistochemistry (IHC), enzyme-linked immunosorbent assay (ELISA), *in vivo* imaging, or flow cytometry.

### II.A. LAG-3 antagonists

**[0261]** A LAG-3 antagonist for use in the methods of the disclosure includes, but is not limited to, LAG-3 binding agents and soluble LAG-3 polypeptides. LAG-3 binding agents include antibodies that specifically bind to LAG-3 (*i.e.*, an "anti-LAG-3 antibody"). The term "LAG-3 antagonist" as used herein is interchangeable with the term "LAG-3 inhibitor."

**[0262]** In some aspects, the LAG-3 antagonist is an anti-LAG-3 antibody.

**[0263]** Antibodies that bind to LAG-3 have been disclosed, for example, in Int'l Publ. No. WO/2015/042246 and U.S. Publ. Nos. 2014/0093511 and 2011/0150892, each of which is incorporated by reference herein in its entirety.

**[0264]** An exemplary LAG-3 antibody useful in the present disclosure is 25F7 (described in U.S. Publ. No. 2011/0150892). An additional exemplary LAG-3 antibody useful in the present disclosure is BMS-986016 (relatlimab). In some aspects, an anti-LAG-3 antibody useful in the present disclosure cross-competes with 25F7 or BMS-986016. In some aspects, an anti-LAG-3 antibody useful in the present disclosure binds to the same epitope as 25F7 or BMS-986016. In some aspects, an anti-LAG-3 antibody comprises six CDRs of 25F7 or BMS-986016.

**[0265]** Other art-recognized anti-LAG-3 antibodies that can be used in the methods of the disclosure include IMP731 (H5L7BW) described in US 2011/007023, MK-4280 (28G-10, favezelimab) described in WO2016028672 and U.S. Publication No. 2020/0055938, REGN3767 (fianlimab) described in Burova E, *et al.*, *J. Immunother. Cancer* (2016); 4(Supp. 1):P195 and U.S. Patent No. 10,358,495, humanized BAP050 described in WO2017/019894, GSK2831781, IMP-701 (LAG525; ieramilimab) described in U.S. Patent No. 10,711,060 and U.S. Publ. No. 2020/0172617, aLAG3(0414), aLAG3(0416), Sym022, TSR-033, TSR-075, XmAb841 (previously XmAb22841), MGD013

(tebotelimab), BI754111, FS118, P 13B02-30, AVA-017, AGEN1746, RO7247669, INCAGN02385, IBI-110, EMB-02, IBI-323, LBL-007, and ABL501. These and other anti-LAG-3 antibodies useful in the claimed invention can be found in, for example: US 10,188,730, WO 2016/028672, WO 2017/106129, WO2017/062888, WO2009/044273, WO2018/069500, WO2016/126858, WO2014/179664, WO2016/200782, WO2015/200119, WO2017/019846, WO2017/198741, WO2017/220555, WO2017/220569, WO2018/071500, WO2017/015560, WO2017/025498, WO2017/087589, WO2017/087901, WO2018/083087, WO2017/149143, WO2017/219995, US2017/0260271, WO2017/086367, WO2017/086419, WO2018/034227, WO2018/185046, WO2018/185043, WO2018/217940, WO19/011306, WO2018/208868, WO2014/140180, WO2018/201096, WO2018/204374, and WO2019/018730. The contents of each of these references are incorporated by reference in their entirety.

**[0266]** Anti-LAG-3 antibodies that can be used in the methods of the disclosure also include isolated antibodies that bind specifically to human LAG-3 and cross-compete for binding to human LAG-3 with any anti-LAG-3 antibody disclosed herein, *e.g.,* relatlimab. In some aspects, the anti-LAG-3 antibody binds the same epitope as any of the anti-LAG-3 antibodies described herein, *e.g.,* relatlimab.

**[0267]** In some aspects, the antibodies that cross-compete for binding to human LAG-3 with, or bind to the same epitope region as, any anti-LAG-3 antibody disclosed herein, *e.g.*, relatlimab, are monoclonal antibodies. For administration to human subjects, these cross-competing antibodies are chimeric antibodies, engineered antibodies, or humanized or human antibodies. Such chimeric, engineered, humanized or human monoclonal antibodies can be prepared and isolated by methods well known in the art.

**[0268]** The ability of antibodies to cross-compete for binding to an antigen indicates that the antibodies bind to the same epitope region of the antigen and sterically hinder the binding of other cross-competing antibodies to that particular epitope region. These cross-competing antibodies are expected to have functional properties very similar those of the reference antibody, *e.g.*, relatlimab, by virtue of their binding to the same epitope region. Cross-competing antibodies can be readily identified based on their ability to cross-compete in standard binding assays such as Biacore analysis, ELISA assays or flow cytometry (*see*, *e.g.*, WO 2013/173223).

[0269] Anti-LAG-3 antibodies that can be used in the methods of the disclosure also include antigen-binding portions of any of the above full-length antibodies. It has been amply demonstrated that the antigen-binding function of an antibody can be performed by fragments of a full-length antibody.

[0270] In some aspects, the anti-LAG-3 antibody is a full-length antibody.

[0271] In some aspects, the anti-LAG-3 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a dual-affinity re-targeting antibody (DART), a DVD-Ig, or bispecific antibody.

[0272] In some aspects, the anti-LAG-3 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

[0273] In some aspects, the anti-LAG-3 antibody is BMS-986016 (relatlimab), IMP731 (H5L7BW), MK4280 (28G-10, favezelimab), REGN3767 (fianlimab), GSK2831781, humanized BAP050, IMP-701 (LAG525, ieramilimab), aLAG3(0414), aLAG3(0416), Sym022, TSR-033, TSR-075, XmAb841 (XmAb22841), MGD013 (tebotelimab), BI754111, FS118, P 13B02-30, AVA-017, 25F7, AGEN1746, RO7247669, INCAGN02385, IBI-110, EMB-02, IBI-323, LBL-007, ABL501, or comprises an antigen binding portion thereof.

[0274] In some aspects, the anti-LAG-3 antibody is relatlimab.

[0275] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4.

[0276] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:5; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:6; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:7; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:8; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:9; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:10.

[0277] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:3 and 4, respectively.

[0278] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences set forth in SEQ ID NOs:1 and 2, respectively.

[0279] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences set forth in SEQ ID NOs:21 and 2, respectively.

[0280] In some aspects, the anti-LAG-3 antibody is MGD013 (tebotelimab), which is a bispecific PD-1 × LAG-3 DART. In some aspects, tebotelimab is administered intravenously at a dose of about 300 mg or about 600 mg once about every 2 or 3 weeks. In some aspects, tebotelimab is administered intravenously at a dose of about 300 mg once about every 2 weeks. In some aspects, tebotelimab is administered intravenously at a dose of about 600 mg once about every 3 weeks.

[0281] In some aspects, the anti-LAG-3 antibody is REGN3767 (fianlimab). In some aspects, fianlimab is administered intravenously at a dose of about 1 mg/kg, about 3 mg/kg, about 10 mg/kg, or about 20 mg/kg once about every 3 weeks. In some aspects, fianlimab is administered intravenously at a dose of about 1600 mg once about every 3 weeks. In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:25, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:26.

[0282] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:27; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:28; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:29; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:30; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:31; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:32.

[0283] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:25 and 26, respectively.

[0284] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences as set forth in SEQ ID NOs:23 and 24, respectively.

[0285] In some aspects, the anti-LAG-3 antibody is LAG525 (ieramilimab). In some aspects, ieramilimab is administered intravenously at a dose of about 300 mg, about 400 mg, about 500 mg, about 600 mg, about 700 mg, about 800 mg, about 900 mg, about 1000 mg, about 1100 mg, about 1200 mg, or about 1300 mg once about every 2, 3, or 4 weeks.

[0286] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:47, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:49.

[0287] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:48, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:50.

[0288] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:51; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:52; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:53; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:54; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:55; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:56.

[0289] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:47 and 49, respectively.

[0290] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:48 and 50, respectively.

[0291] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences as set forth in SEQ ID NOs:43 and 45, respectively.

[0292] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences as set forth in SEQ ID NOs:44 and 46, respectively.

[0293] In some aspects, the anti-LAG-3 antibody is MK4280 (favezelimab). In some aspects, favezelimab is administered intravenously at a dose of about 7 mg, about 21 mg, about 70 mg, about 210 mg, about 700 mg, or about 800 mg once about every 3 weeks or once about every 6 weeks. In some aspects, favezelimab is administered intravenously at a dose of about 200 mg once about every 3 weeks. In some aspects, favezelimab is administered intravenously at a dose of about 800 mg once about every 6 weeks. In some aspects, favezelimab is administered intravenously at a dose of about 800 mg on Day 1, then once about every 3 weeks. In some aspects, favezelimab is administered for up to 35 cycles. In some aspects, favezelimab is administered intravenously at a dose of about 800 mg for about 30 minutes on Day 1 of a three-week cycle for up to 35 cycles.

[0294] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:69, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:70.

[0295] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:71; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:72; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:73; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:74; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:75; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:76.

[0296] In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:69 and 70, respectively.

**[0297]** In some aspects, the methods of the disclosure comprise an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences as set forth in SEQ ID NOs:67 and 68, respectively.

**[0298]** In some aspects, the LAG-3 antagonist is a soluble LAG-3 polypeptide. In some aspects, the soluble LAG-3 polypeptide is a fusion polypeptide, *e.g.*, a fusion protein comprising the extracellular portion of LAG-3. In some aspects, the soluble LAG-3 polypeptide is a LAG-3-Fc fusion polypeptide capable of binding to MHC Class II. In some aspects, the soluble LAG-3 polypeptide comprises a ligand binding fragment of the LAG-3 extracellular domain. In some aspects, the ligand binding fragment of the LAG-3 extracellular domain comprises an amino acid sequence with at least about 90%, at least about 95%, at least about 98%, at least about 99%, or about 100% sequence identity to SEQ ID NO:22. In some aspects, the soluble LAG-3 polypeptide further comprises a half-life extending moiety. In some aspects, the half-life extending moiety comprises an immunoglobulin constant region or a portion thereof, an immunoglobulin-binding polypeptide, an immunoglobulin G (IgG), albumin-binding polypeptide (ABP), a PASylation moiety, a HESylation moiety, XTEN, a PEGylation moiety, an Fc region, or any combination thereof. In some aspects, the soluble LAG-3 polypeptide is IMP321 (eftilagimod alpha). *See*, *e.g.*, Brignone C, *et al.*, *J. Immunol.* (2007); 179:4202-4211 and WO2009/044273. In some aspects, eftilagimod alpha is administered at a dose of about 30 mg. In some aspects, eftilagimod alpha is administered subcutaneously at a dose of about 30 mg once about every 2 weeks.

**[0299]** In some aspects, an anti-LAG-3 antibody is used to determine LAG-3 expression. In some aspects, an anti-LAG-3 antibody is selected for its ability to bind to LAG-3 in formalin-fixed, paraffin-embedded (FFPE) tissue specimens. In some aspects, an anti-LAG-3 antibody is capable of binding to LAG-3 in frozen tissues. In some aspects, an anti-LAG-3 antibody is capable of distinguishing membrane bound, cytoplasmic, and/or soluble forms of LAG-3.

**[0300]** In some aspects, an anti-LAG-3 antibody useful for assaying, detecting, and/or quantifying LAG-3 expression in accordance with the methods disclosed herein is the 17B4 mouse IgG1 anti-human LAG-3 monoclonal antibody. *See*, *e.g.*, Matsuzaki, J *et al.*, *PNAS* (2010); 107:7875.

**[0301]** In some aspects, the LAG-3 antagonist is formulated for intravenous administration.

[0302] In some aspects, the anti-LAG-3 antibody is administered intravenously for about 30 minutes.

[0303] In some aspects, the LAG-3 antagonist is administered at a flat dose.

[0304] In some aspects, the LAG-3 antagonist is administered at a dose of from at least about 0.25 mg to about 2000 mg, about 0.25 mg to about 1600 mg, about 0.25 mg to about 1200 mg, about 0.25 mg to about 800 mg, about 0.25 mg to about 400 mg, about 0.25 mg to about 100 mg, about 0.25 mg to about 50 mg, about 0.25 mg to about 40 mg, about 0.25 mg to about 30 mg, about 0.25 mg to about 20 mg, about 20 mg to about 2000 mg, about 20 mg to about 1600 mg, about 20 mg to about 1200 mg, about 20 mg to about 800 mg, about 20 mg to about 400 mg, about 20 mg to about 100 mg, about 100 mg to about 2000 mg, about 100 mg to about 1800 mg, about 100 mg to about 1600 mg, about 100 mg to about 1400 mg, about 100 mg to about 1200 mg, about 100 mg to about 1000 mg, about 100 mg to about 800 mg, about 100 mg to about 600 mg, about 100 mg to about 400 mg, about 400 mg to about 2000 mg, about 400 mg to about 1800 mg, about 400 mg to about 1600 mg, about 400 mg to about 1400 mg, about 400 mg to about 1200 mg, or about 400 mg to about 1000 mg.

[0305] In some aspects, the LAG-3 antagonist is administered at a dose of about 0.25 mg, about 0.5 mg, about 0.75 mg, about 1 mg, about 1.25 mg, about 1.5 mg, about 1.75 mg, about 2 mg, about 2.25 mg, about 2.5 mg, about 2.75 mg, about 3 mg, about 3.25 mg, about 3.5 mg, about 3.75 mg, about 4 mg, about 4.25 mg, about 4.5 mg, about 4.75 mg, about 5 mg, about 5.25 mg, about 5.5 mg, about 5.75 mg, about 6 mg, about 6.25 mg, about 6.5 mg, about 6.75 mg, about 7 mg, about 7.25 mg, about 7.5 mg, about 7.75 mg, about 8 mg, about 8.25 mg, about 8.5 mg, about 8.75 mg, about 9 mg, about 9.25 mg, about 9.5 mg, about 9.75 mg, about 10 mg, about 20 mg, about 30 mg, about 40 mg, about 50 mg, about 60 mg, about 70 mg, about 80 mg, about 90 mg, about 100 mg, about 110 mg, about 120 mg, about 130 mg, about 140 mg, about 150 mg, about 160 mg, about 170 mg, about 180 mg, about 190 mg, about 200 mg, about 210 mg, about 220 mg, about 230 mg, about 240 mg, about 250 mg, about 260 mg, about 270 mg, about 280 mg, about 290 mg, about 300 mg, about 310 mg, about 320 mg, about 330 mg, about 340 mg, about 350 mg, about 360 mg, about 370 mg, about 380 mg, about 390 mg, about 400 mg, about 410 mg, about 420 mg, about 430 mg, about 440 mg, about 450 mg, about 460 mg, about 470 mg, about 480 mg, about 490 mg, about 500 mg, about 510 mg, about 520 mg, about 530 mg, about 540

mg, about 550 mg, about 560 mg, about 570 mg, about 580 mg, about 590 mg, about 600 mg, about 610 mg, about 620 mg, about 630 mg, about 640 mg, about 650 mg, about 660 mg, about 670 mg, about 680 mg, about 690 mg, about 700 mg, about 710 mg, about 720 mg, about 730 mg, about 740 mg, about 750 mg, about 760 mg, about 770 mg, about 780 mg, about 790 mg, about 800 mg, about 810 mg, about 820 mg, about 830 mg, about 840 mg, about 850 mg, about 860 mg, about 870 mg, about 880 mg, about 890 mg, about 900 mg, about 910 mg, about 920 mg, about 930 mg, about 940 mg, about 950 mg, about 960 mg, about 970 mg, about 980 mg, about 990 mg, about 1000 mg, about 1040 mg, about 1080 mg, about 1100 mg, about 1140 mg, about 1180 mg, about 1200 mg, about 1240 mg, about 1280 mg, about 1300 mg, about 1340 mg, about 1380 mg, about 1400 mg, about 1440 mg, about 1480 mg, about 1500 mg, about 1540 mg, about 1580 mg, about 1600 mg, about 1640 mg, about 1680 mg, about 1700 mg, about 1740 mg, about 1780 mg, about 1800 mg, about 1840 mg, about 1880 mg, about 1900 mg, about 1940 mg, about 1980 mg, or about 2000 mg.

**[0306]** In some aspects, the LAG-3 antagonist is administered at a weight-based dose.

**[0307]** In some aspects, the LAG-3 antagonist is administered at a dose from about 0.003 mg/kg to about 25 mg/kg, about 0.003 mg/kg to about 20 mg/kg, about 0.003 mg/kg to about 15 mg/kg, about 0.003 mg/kg to about 10 mg/kg, about 0.003 mg/kg to about 5 mg/kg, about 0.003 mg/kg to about 1 mg/kg, about 0.003 mg/kg to about 0.9 mg/kg, about 0.003 mg/kg to about 0.8 mg/kg, about 0.003 mg/kg to about 0.7 mg/kg, about 0.003 mg/kg to about 0.6 mg/kg, about 0.003 mg/kg to about 0.5 mg/kg, about 0.003 mg/kg to about 0.4 mg/kg, about 0.003 mg/kg to about 0.3 mg/kg, about 0.003 mg/kg to about 0.2 mg/kg, about 0.003 mg/kg to about 0.1 mg/kg, about 0.1 mg/kg to about 25 mg/kg, about 0.1 mg/kg to about 20 mg/kg, about 0.1 mg/kg to about 15 mg/kg, about 0.1 mg/kg to about 10 mg/kg, about 0.1 mg/kg to about 5 mg/kg, about 0.1 mg/kg to about 1 mg/kg, about 1 mg/kg to about 25 mg/kg, about 1 mg/kg to about 20 mg/kg, about 1 mg/kg to about 15 mg/kg, about 1 mg/kg to about 10 mg/kg, about 1 mg/kg to about 5 mg/kg, about 5 mg/kg to about 25 mg/kg, about 5 mg/kg to about 20 mg/kg, about 5 mg/kg to about 15 mg/kg, about 5 mg/kg to about 10 mg/kg, about 10 mg/kg to about 25 mg/kg, about 10 mg/kg to about 20 mg/kg, about 10 mg/kg to about 15 mg/kg, about 15 mg/kg to about 25 mg/kg, about 15 mg/kg to about 20 mg/kg, or about 20 mg/kg to about 25 mg/kg.

[0308] In some aspects, the LAG-3 antagonist is administered at a dose of about 0.003 mg/kg, about 0.004 mg/kg, about 0.005 mg/kg, about 0.006 mg/kg, about 0.007 mg/kg, about 0.008 mg/kg, about 0.009 mg/kg, about 0.01 mg/kg, about 0.02 mg/kg, about 0.03 mg/kg, about 0.04 mg/kg, about 0.05 mg/kg, about 0.06 mg/kg, about 0.07 mg/kg, about 0.08 mg/kg, about 0.09 mg/kg, about 0.1 mg/kg, about 0.2 mg/kg, about 0.3 mg/kg, about 0.4 mg/kg, about 0.5 mg/kg, about 0.6 mg/kg, about 0.7 mg/kg, about 0.8 mg/kg, about 0.9 mg/kg, about 1.0 mg/kg, about 2.0 mg/kg, about 3.0 mg/kg, about 4.0 mg/kg, about 5.0 mg/kg, about 6.0 mg/kg, about 7.0 mg/kg, about 8.0 mg/kg, about 9.0 mg/kg, about 10.0 mg/kg, about 11.0 mg/kg, about 12.0 mg/kg, about 13.0 mg/kg, about 14.0 mg/kg, about 15.0 mg/kg, about 16.0 mg/kg, about 17.0 mg/kg, about 18.0 mg/kg, about 19.0 mg/kg, about 20.0 mg/kg, about 21.0 mg/kg, about 22.0 mg/kg, about 23.0 mg/kg, about 24.0 mg/kg, or about 25.0 mg/kg.

[0309] In some aspects, the dose is administered once about every one week, once about every two weeks, once about every three weeks, once about every four weeks, once about every five weeks, once about every six weeks, once about every seven weeks, once about every eight weeks, once about every nine weeks, once about every ten weeks, once about every eleven weeks, or once about every twelve weeks.

[0310] In some aspects, a LAG-3 antagonist as described herein is administered as a monotherapy, *i.e.*, the LAG-3 antagonist is not administered in combination with one or more additional therapeutic agents.

[0311] In some aspects, a LAG-3 antagonist as described herein is administered as a combination therapy, *i.e.*, the LAG-3 antagonist is administered in combination with one or more additional therapeutic agents and/or anti-cancer therapies.

### II.B Additional Therapeutic Agents and Therapies

[0312] In some aspects, the methods of the disclosure further comprise administering to the subject an additional therapeutic agent and/or anti-cancer therapy. The additional therapeutic agent and/or anti-cancer therapy can comprise any known therapeutic agent or anti-cancer therapy, including a standard of care in the art for the treatment of a subject afflicted with a hematological cancer, such as described by the NCCN Guidelines®.

[0313] In some aspects, the additional anti-cancer therapy comprises a surgery, a radiation therapy, a chemotherapy, an immunotherapy, or any combination thereof. In some aspects,

the additional anti-cancer therapy comprises a chemotherapy, including any chemotherapeutic agent disclosed herein.

**[0314]** In some aspects, the additional therapeutic agent comprises an anti-cancer agent. In some aspects, the anti-cancer agent comprises a tyrosine kinase inhibitor, an anti-angiogenesis agent, a checkpoint inhibitor, a checkpoint stimulator, a chemotherapeutic agent, an immunotherapeutic agent, a platinum agent, an alkylating agent, a taxane, a nucleoside analog, an antimetabolite, a topisomerase inhibitor, an anthracycline, a vinca alkaloid, or any combination thereof.

**[0315]** In some aspects, the tyrosine kinase inhibitor comprises sorafenib (*e.g.*, sorafenib tosylate, also known as NEXAVAR®), lenvatinib (*e.g.*, lenvatinib mesylate, also known as LENVIMA®), regorafenib (*e.g.*, STIVARGA®), cabozantinib (*e.g.*, cabozantinib S-malate, also known as CABOMETYX®), sunitinib (*e.g.*, sunitinib malate, also known as SUTENT®), brivanib, linifanib, pemigatinib (also known as PEMAZYRE™), everolimus (also known as AFINITOR® or ZORTRESS®), gefitinib (IRESSA®, a small-molecule TKI of EGFR), imatinib (*e.g.*, imatinib mesylate), lapatinib (*e.g.*, lapatinib ditosylate, also known as TYKERB®), nilotinib (*e.g.*, nilotinib hydrochloride, also known as TASIGNA®), pazopanib (*e.g.*, pazopanib hydrochloride, also known as VOTRIENT®), temsirolimus (also known as TORISEL®), erlotinib (*e.g.*, erlotinib hydrochloride, also known as TARCEVA®, a small-molecule TKI of EGFR), afatinib (GILOTRIF®, a small-molecule TKI of EGFR), dacomitinib (VIZIMPRO®, a small-molecule TKI of EGFR), osimeritinb (TAGRISSO®, a small-molecule TKI of EGFR), alectinib (ALECENSA®, a small-molecule TKI of ALK), ceritinib (ZYKADIA®, a small-molecule TKI of ALK and ROS-1), brigatinib (ALUNBRIG®, a small-molecule TKI of ALK), crizotinib (XALKORI®, a small-molecule TKI of ALK and ROS-1), lorlatinib (LORBRENA®, a small-molecule TKI of ALK and ROS-1), entrectinib (ROZLYTREK®, a small-molecule TKI of ROS-1 and NTRK), dabrafenib (TAFINLAR®, a small-molecule TKI of BRAF) trametinib (MEKINIST®, a small-molecule TKI of BRAF), vemurafenib (ZELBORAF®, a small-molecule TKI of BRAF), larotrectinib (ROZLYTREK®, a small-molecule TKI of NTRK), or any combination thereof.

**[0316]** In some aspects, the anti-angiogenesis agent comprises an inhibitor of a vascular endothelial growth factor (VEGF), VEGF receptor (VEGFR), platelet-derived growth factor (PDGF), PDGF receptor (PDGFR), angiopoietin (Ang), tyrosine kinase with Ig-like

and EGF-like domains (Tie) receptor, hepatocyte growth factor (HGF), tyrosine-protein kinase Met (c-MET), C-type lectin family 14 member A (CLEC14A), multimerin 2 (MMRN2), shock protein 70-1A (HSP70-1A), a epidermal growth factor (EGF), EGFR, or any combination thereof. In some aspects, the anti-angiogenesis agent comprises bevacizumab (also known as AVASTIN®), ramucirumab (also known as CYRAMZA®), aflibercept (also known as EYLEA® or ZALTRAP®), tanibirumab, olaratumab (also known as LARTRUVO™), nesvacumab, AMG780, MEDI3617, vanucizumab, rilotumumab, ficlatuzumab, TAK-701, onartuzumab, emibetuzumab, or any combination thereof.

**[0317]** In some aspects, the checkpoint stimulator comprises an agonist of B7-1, B7-2, CD28, 4-1BB (CD137), 4-1BBL, GITR, inducible T cell co-stimulator (ICOS), ICOS-L, OX40, OX40L, CD70, CD27, CD40, death receptor 3 (DR3), CD28H, or any combination thereof.

**[0318]** In some aspects, the chemotherapeutic agent comprises an alkylating agent, an antimetabolite, an antineoplastic antibiotic, a mitotic inhibitor, a hormone or hormone modulator, a protein tyrosine kinase inhibitor, an epidermal growth factor inhibitor, a proteasome inhibitor, other neoplastic agent, or any combination thereof.

**[0319]** In some aspects, the immunotherapeutic agent comprises an antibody that specifically binds to EGFR (*e.g.*, cetuximab (ERBITUX®)), ALK, ROS-1, NTRK, BRAF, ICOS, CD137 (4-1BB), CD134 (OX40), NKG2A, CD27, CD96, GITR, Herpes Virus Entry Mediator (HVEM), PD-1, PD-L1, CTLA-4, BTLA, TIM-3, A2aR, Killer cell Lectin-like Receptor G1 (KLRG-1), Natural Killer Cell Receptor 2B4 (CD244), CD160, TIGIT, VISTA, KIR, TGFβ, IL-10, IL-8, B7-H4, Fas ligand, CSF1R, CXCR4, mesothelin, CEACAM-1, CD52, HER2, MICA, MICB, or any combination thereof.

**[0320]** In some aspects, the platinum agent comprises cisplatin, carboplatin, oxaliplatin, satraplatin, picoplatin, nedaplatin, triplatin (*e.g.*, triplatin tetranitrate), lipoplatin, phenanthriplatin, or any combination thereof.

**[0321]** In some aspects, the alkylating agent comprises altretamine, bendamustine, busulfan, carboplatin, carmustine, chlorambucil, cisplatin, cyclophosphamide, dacarbazine, ifosfamide, lomustine, mechlorethamine, melphalan, oxaliplatin, procarbazine, streptozocin, temozolomide, thiotepa, or any combination thereof.

[0322] In some aspects, the taxane comprises paclitaxel, albumin-bound paclitaxel (*i.e.*, nab-paclitaxel), docetaxel, cabazitaxel, or any combination thereof.

[0323] In some aspects, the nucleoside analog comprises cytarabine, gemcitabine, lamivudine, entecavir, telbivudine, or any combination thereof.

[0324] In some aspects, the antimetabolite comprises capecitabine, cladribine, clofarabine, cytarabine, floxuridine, fludarabine, fluorouracil, gemcitabine, mercaptopurine, methotrexate, pemetrexed, pentostatin, pralatrexate, thioguanine, or any combination thereof.

[0325] In some embodiments, the topoisomerase inhibitor comprises etoposide, mitoxantrone, doxorubicin, irinotecan, topotecan, camptothecin, or any combination thereof.

[0326] In some aspects, the anthracycline is doxorubicin, daunorubicin, epirubicin, idarubicin, or any combination thereof.

[0327] In some aspects, the vinca alkaloid is vinblastine, vincristine, vinorelbine, vindesine, vincaminol, vineridine, vinburnine, or any combination thereof

### II.B.1. Checkpoint Inhibitors

[0328] In some aspects, the anti-cancer agent that is administered as an additional therapeutic agent in the methods of the disclosure is a checkpoint inhibitor.

[0329] In some aspects, the checkpoint inhibitor comprises a programmed death-1 (PD-1) pathway inhibitor, a cytotoxic T-lymphocyte-associated protein 4 (CTLA-4) inhibitor, a T cell immunoglobulin and ITIM domain (TIGIT) inhibitor, a T cell immunoglobulin and mucin-domain containing-3 (TIM-3) inhibitor, a TIM-1 inhibitor, a TIM-4 inhibitor, a B7-H3 inhibitor, a B7-H4 inhibitor, a B and T cell lymphocyte attenuator (BTLA) inhibitor, a V-domain Ig suppressor of T cell activation (VISTA) inhibitor, an indoleamine 2,3-dioxygenase (IDO) inhibitor (*e.g.*, an indoleamine 2,3-dioxygenase 1 (IDO1) inhibitor, epacadostat (INCB24360), navoximod (GDC-0919), or linrodostat (BMS-986205), including a linrodostat salt such as, for example, linrodostat mesylate), a nicotinamide adenine dinucleotide phosphate oxidase isoform 2 (NOX2) inhibitor, a killer-cell immunoglobulin-like receptor (KIR) inhibitor, an adenosine A2a receptor (A2aR) inhibitor, a transforming growth factor beta (TGF-β) inhibitor, a phosphoinositide 3-kinase (PI3K) inhibitor, a CD47 inhibitor, a CD48 inhibitor, a CD73 inhibitor, a CD113 inhibitor, a sialic acid-binding immunoglobulin-like lectin-7 (SIGLEC-7) inhibitor, a SIGLEC-9

inhibitor, a SIGLEC-15 inhibitor, a glucocorticoid-induced TNFR-related protein (GITR) inhibitor, a galectin-1 inhibitor, a galectin-9 inhibitor, a carcinoembryonic antigen-related cell adhesion molecule-1 (CEACAM-1) inhibitor, a G protein-coupled receptor 56 (GPR56) inhibitor, a glycoprotein A repetitions predominant (GARP) inhibitor, a 2B4 inhibitor, a programmed death-1 homolog (PD1H) inhibitor, a leukocyte-associated immunoglobulin-like receptor 1 (LAIR1) inhibitor, or any combination thereof.

**[0330]** In some aspects, the checkpoint inhibitor is formulated for intravenous administration.

**[0331]** In some aspects, the LAG-3 antagonist and the checkpoint inhibitor are formulated separately. In some aspects, each checkpoint inhibitor is formulated separately when the checkpoint inhibitor comprises more than one checkpoint inhibitor. In some aspects, the checkpoint inhibitor is administered before the LAG-3 antagonist. In some aspects, the LAG-3 antagonist is administered before the checkpoint inhibitor.

**[0332]** In some aspects, the LAG-3 antagonist and the checkpoint inhibitor are formulated together. In some aspects, two or more checkpoint inhibitors are formulated together when the checkpoint inhibitor comprises more than one checkpoint inhibitor.

**[0333]** In some aspects, the LAG-3 antagonist and the checkpoint inhibitor are administered concurrently.

**[0334]** In some aspects, the checkpoint inhibitor is administered at a flat dose.

**[0335]** In some aspects, the checkpoint inhibitor is administered at a dose of from at least about 0.25 mg to about 2000 mg, about 0.25 mg to about 1600 mg, about 0.25 mg to about 1200 mg, about 0.25 mg to about 800 mg, about 0.25 mg to about 400 mg, about 0.25 mg to about 100 mg, about 0.25 mg to about 50 mg, about 0.25 mg to about 40 mg, about 0.25 mg to about 30 mg, about 0.25 mg to about 20 mg, about 20 mg to about 2000 mg, about 20 mg to about 1600 mg, about 20 mg to about 1200 mg, about 20 mg to about 800 mg, about 20 mg to about 400 mg, about 20 mg to about 100 mg, about 100 mg to about 2000 mg, about 100 mg to about 1800 mg, about 100 mg to about 1600 mg, about 100 mg to about 1400 mg, about 100 mg to about 1200 mg, about 100 mg to about 1000 mg, about 100 mg to about 800 mg, about 100 mg to about 600 mg, about 100 mg to about 400 mg, about 400 mg to about 2000 mg, about 400 mg to about 1800 mg, about 400 mg to about 1600 mg, about 400 mg to about 1400 mg, about 400 mg to about 1200 mg, or about 400 mg to about 1000 mg.

[0336] In some aspects, the checkpoint inhibitor is administered at a dose of about 0.25 mg, about 0.5 mg, about 0.75 mg, about 1 mg, about 1.25 mg, about 1.5 mg, about 1.75 mg, about 2 mg, about 2.25 mg, about 2.5 mg, about 2.75 mg, about 3 mg, about 3.25 mg, about 3.5 mg, about 3.75 mg, about 4 mg, about 4.25 mg, about 4.5 mg, about 4.75 mg, about 5 mg, about 5.25 mg, about 5.5 mg, about 5.75 mg, about 6 mg, about 6.25 mg, about 6.5 mg, about 6.75 mg, about 7 mg, about 7.25 mg, about 7.5 mg, about 7.75 mg, about 8 mg, about 8.25 mg, about 8.5 mg, about 8.75 mg, about 9 mg, about 9.25 mg, about 9.5 mg, about 9.75 mg, about 10 mg, about 20 mg, about 30 mg, about 40 mg, about 50 mg, about 60 mg, about 70 mg, about 80 mg, about 90 mg, about 100 mg, about 110 mg, about 120 mg, about 130 mg, about 140 mg, about 150 mg, about 160 mg, about 170 mg, about 180 mg, about 190 mg, about 200 mg, about 210 mg, about 220 mg, about 230 mg, about 240 mg, about 250 mg, about 260 mg, about 270 mg, about 280 mg, about 290 mg, about 300 mg, about 310 mg, about 320 mg, about 330 mg, about 340 mg, about 350 mg, about 360 mg, about 370 mg, about 380 mg, about 390 mg, about 400 mg, about 410 mg, about 420 mg, about 430 mg, about 440 mg, about 450 mg, about 460 mg, about 470 mg, about 480 mg, about 490 mg, about 500 mg, about 510 mg, about 520 mg, about 530 mg, about 540 mg, about 550 mg, about 560 mg, about 570 mg, about 580 mg, about 590 mg, about 600 mg, about 610 mg, about 620 mg, about 630 mg, about 640 mg, about 650 mg, about 660 mg, about 670 mg, about 680 mg, about 690 mg, about 700 mg, about 710 mg, about 720 mg, about 730 mg, about 740 mg, about 750 mg, about 760 mg, about 770 mg, about 780 mg, about 790 mg, about 800 mg, about 810 mg, about 820 mg, about 830 mg, about 840 mg, about 850 mg, about 860 mg, about 870 mg, about 880 mg, about 890 mg, about 900 mg, about 910 mg, about 920 mg, about 930 mg, about 940 mg, about 950 mg, about 960 mg, about 970 mg, about 980 mg, about 990 mg, about 1000 mg, about 1040 mg, about 1080 mg, about 1100 mg, about 1140 mg, about 1180 mg, about 1200 mg, about 1240 mg, about 1280 mg, about 1300 mg, about 1340 mg, about 1380 mg, about 1400 mg, about 1440 mg, about 1480 mg, about 1500 mg, about 1540 mg, about 1580 mg, about 1600 mg, about 1640 mg, about 1680 mg, about 1700 mg, about 1740 mg, about 1780 mg, about 1800 mg, about 1840 mg, about 1880 mg, about 1900 mg, about 1940 mg, about 1980 mg, or about 2000 mg.

[0337] In some aspects, the checkpoint inhibitor is administered as a weight-based dose.

**[0338]** In some aspects, the checkpoint inhibitor is administered at a dose from about 0.003 mg/kg to about 25 mg/kg, about 0.003 mg/kg to about 20 mg/kg, about 0.003 mg/kg to about 15 mg/kg, about 0.003 mg/kg to about 10 mg/kg, about 0.003 mg/kg to about 5 mg/kg, about 0.003 mg/kg to about 1 mg/kg, about 0.003 mg/kg to about 0.9 mg/kg, about 0.003 mg/kg to about 0.8 mg/kg, about 0.003 mg/kg to about 0.7 mg/kg, about 0.003 mg/kg to about 0.6 mg/kg, about 0.003 mg/kg to about 0.5 mg/kg, about 0.003 mg/kg to about 0.4 mg/kg, about 0.003 mg/kg to about 0.3 mg/kg, about 0.003 mg/kg to about 0.2 mg/kg, about 0.003 mg/kg to about 0.1 mg/kg, about 0.1 mg/kg to about 25 mg/kg, about 0.1 mg/kg to about 20 mg/kg, about 0.1 mg/kg to about 15 mg/kg, about 0.1 mg/kg to about 10 mg/kg, about 0.1 mg/kg to about 5 mg/kg, about 0.1 mg/kg to about 1 mg/kg, about 1 mg/kg to about 25 mg/kg, about 1 mg/kg to about 20 mg/kg, about 1 mg/kg to about 15 mg/kg, about 1 mg/kg to about 10 mg/kg, about 1 mg/kg to about 5 mg/kg, about 5 mg/kg to about 25 mg/kg, about 5 mg/kg to about 20 mg/kg, about 5 mg/kg to about 15 mg/kg, about 5 mg/kg to about 10 mg/kg, about 10 mg/kg to about 25 mg/kg, about 10 mg/kg to about 20 mg/kg, about 10 mg/kg to about 15 mg/kg, about 15 mg/kg to about 25 mg/kg, about 15 mg/kg to about 20 mg/kg, or about 20 mg/kg to about 25 mg/kg.

**[0339]** In some aspects, the checkpoint inhibitor is administered at a dose of about 0.003 mg/kg, about 0.004 mg/kg, about 0.005 mg/kg, about 0.006 mg/kg, about 0.007 mg/kg, about 0.008 mg/kg, about 0.009 mg/kg, about 0.01 mg/kg, about 0.02 mg/kg, about 0.03 mg/kg, about 0.04 mg/kg, about 0.05 mg/kg, about 0.06 mg/kg, about 0.07 mg/kg, about 0.08 mg/kg, about 0.09 mg/kg, about 0.1 mg/kg, about 0.2 mg/kg, about 0.3 mg/kg, about 0.4 mg/kg, about 0.5 mg/kg, about 0.6 mg/kg, about 0.7 mg/kg, about 0.8 mg/kg, about 0.9 mg/kg, about 1.0 mg/kg, about 2.0 mg/kg, about 3.0 mg/kg, about 4.0 mg/kg, about 5.0 mg/kg, about 6.0 mg/kg, about 7.0 mg/kg, about 8.0 mg/kg, about 9.0 mg/kg, about 10.0 mg/kg, about 11.0 mg/kg, about 12.0 mg/kg, about 13.0 mg/kg, about 14.0 mg/kg, about 15.0 mg/kg, about 16.0 mg/kg, about 17.0 mg/kg, about 18.0 mg/kg, about 19.0 mg/kg, about 20.0 mg/kg, about 21.0 mg/kg, about 22.0 mg/kg, about 23.0 mg/kg, about 24.0 mg/kg, or about 25.0 mg/kg.

**[0340]** In some aspects, the dose of the checkpoint inhibitor is administered every one week, every two weeks, every three weeks, every four weeks, every five weeks, every six weeks, every seven weeks, every eight weeks, every nine weeks, every ten weeks, every eleven weeks, or every twelve weeks.

[0341] In some aspects, each dose of the LAG-3 antagonist and/or the checkpoint inhibitor is administered in a constant amount.

[0342] In some aspects, each dose of the LAG-3 antagonist and/or the checkpoint inhibitor is administered in a varying amount. For example, in some aspects, the maintenance (or follow-on) dose of the LAG-3 antagonist and/or the checkpoint inhibitor can be higher or the same as the loading dose which is first administered. In some aspects, the maintenance dose of the LAG-3 antagonist and/or the checkpoint inhibitor can be lower or the same as the loading dose.

**II.B.1.a. PD-1 pathway inhibitors**

[0343] In some aspects, the checkpoint inhibitor for use in the methods of the disclosure comprises a PD-1 pathway inhibitor.

[0344] In some aspects the PD-1 pathway inhibitor is a PD-1 inhibitor and/or a PD-L1 inhibitor.

[0345] In some aspects, the PD-1 inhibitor and/or PD-L1 inhibitor is a small molecule.

[0346] In some aspects, the PD-1 inhibitor and/or PD-L1 inhibitor is a millamolecule.

[0347] In some aspects, the PD-1 inhibitor and/or PD-L1 inhibitor is a macrocyclic peptide.

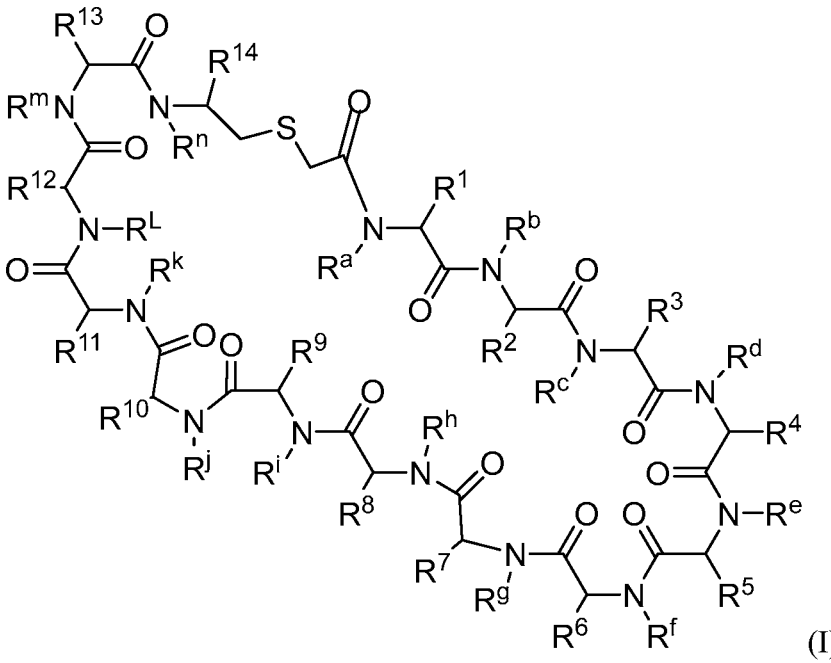
[0348] In certain aspects, the PD-1 inhibitor and/or PD-L1 inhibitor is BMS-986189.

[0349] In some aspects, the PD-1 inhibitor is an inhibitor disclosed in International Publication No. WO2014/151634, which is incorporated by reference herein in its entirety.

[0350] In some aspects, the PD-1 inhibitor is INCMGA00012 (Insight Pharmaceuticals).

[0351] In some aspects, the PD-1 inhibitor comprises a combination of an anti-PD-1 antibody disclosed herein and a PD-1 small molecule inhibitor.

[0352] In some aspects, the PD-L1 inhibitor comprises a millamolecule having a formula set forth in formula (I):



(I),

wherein $R^1$-$R^{13}$ are amino acid side chains, $R^a$-$R^n$ are hydrogen, methyl, or form a ring with a vicinal R group, and $R^{14}$ is $-C(O)NHR^{15}$, wherein $R^{15}$ is hydrogen, or a glycine residue optionally substituted with additional glycine residues and/or tails which can improve pharmacokinetic properties. In some aspects, the PD-L1 inhibitor comprises a compound disclosed in International Publication No. WO2014/151634, which is incorporated by reference herein in its entirety. In some aspects, the PD-L1 inhibitor comprises a compound disclosed in International Publication No. WO2016/039749, WO2016/149351, WO2016/077518, WO2016/100285, WO2016/100608, WO2016/126646, WO2016/057624, WO2017/151830, WO2017/176608, WO2018/085750, WO2018/237153, or WO2019/070643, each of which is incorporated by reference herein in its entirety.

**[0353]** In some aspects, the PD-L1 inhibitor comprises a small molecule PD-L1 inhibitor disclosed in International Publication No. WO2015/034820, WO2015/160641, WO2018/044963, WO2017/066227, WO2018/009505, WO2018/183171, WO2018/118848, WO2019/147662, or WO2019/169123, each of which is incorporated by reference herein in its entirety.

**[0354]** In some aspects, the PD-1 pathway inhibitor is a soluble PD-L2 polypeptide. In some aspects, the soluble PD-L2 polypeptide is a fusion polypeptide. In some aspects, the soluble PD-L2 polypeptide comprises a ligand binding fragment of the PD-L2 extracellular domain. In some aspects, the soluble PD-L2 polypeptide further comprises a half-life

extending moiety. In some aspects, the half-life extending moiety comprises an immunoglobulin constant region or a portion thereof, an immunoglobulin-binding polypeptide, an immunoglobulin G (IgG), albumin-binding polypeptide (ABP), a PASylation moiety, a HESylation moiety, XTEN, a PEGylation moiety, an Fc region, or any combination thereof. In some aspects, the soluble PD-L2 polypeptide is AMP-224 (*see*, *e.g.*, US 2013/0017199).

**[0355]** In some aspects, the PD-1 pathway inhibitor is an anti-PD-1 antibody and/or an anti-PD-L1 antibody.

**II.B.1.a.i. Anti-PD-1 Antibodies**

**[0356]** Anti-PD-1 antibodies that are known in the art can be used in the methods of the disclosure. Various human monoclonal antibodies that bind specifically to PD-1 with high affinity have been disclosed in U.S. Patent No. 8,008,449. Anti-PD-1 human antibodies disclosed in U.S. Patent No. 8,008,449 have been demonstrated to exhibit one or more of the following characteristics: (a) bind to human PD-1 with a $K_D$ of 1 x $10^{-7}$ M or less, as determined by surface plasmon resonance using a Biacore biosensor system; (b) do not substantially bind to human CD28, CTLA-4 or ICOS; (c) increase T-cell proliferation in a Mixed Lymphocyte Reaction (MLR) assay; (d) increase interferon-γ production in an MLR assay; (e) increase IL-2 secretion in an MLR assay; (f) bind to human PD-1 and cynomolgus monkey PD-1; (g) inhibit the binding of PD-L1 and/or PD-L2 to PD-1; (h) stimulate antigen-specific memory responses; (i) stimulate antibody responses; and (j) inhibit tumor cell growth *in vivo*. Anti-PD-1 antibodies usable in the present disclosure include monoclonal antibodies that bind specifically to human PD-1 and exhibit at least one, in some aspects, at least five, of the preceding characteristics.

**[0357]** Other anti-PD-1 monoclonal antibodies that can be used in the methods of the disclosure have been described in, for example, U.S. Patent Nos. 6,808,710, 7,488,802, 8,168,757 and 8,354,509, US Publication No. 2016/0272708, and PCT Publication Nos. WO 2012/145493, WO 2008/156712, WO 2015/112900, WO 2012/145493, WO 2015/112800, WO 2014/206107, WO 2015/35606, WO 2015/085847, WO 2014/179664, WO 2017/020291, WO 2017/020858, WO 2016/197367, WO 2017/024515, WO 2017/025051, WO 2017/123557, WO 2016/106159, WO 2014/194302, WO 2017/040790, WO 2017/133540, WO 2017/132827, WO 2017/024465, WO 2017/025016, WO

2017/106061, WO 2017/19846, WO 2017/024465, WO 2017/025016, WO 2017/132825, and WO 2017/133540 each of which is incorporated by reference in its entirety.

**[0358]** Anti-PD-1 antibodies that can be used in the methods of the disclosure include nivolumab (also known as OPDIVO®, 5C4, BMS-936558, MDX-1106, and ONO-4538), pembrolizumab (Merck; also known as KEYTRUDA®, lambrolizumab, and MK3475; *see* WO 2008/156712), PDR001 (Novartis; also known as spartalizumab; *see* WO 2015/112900 and U.S. Patent No. 9,683,048), MEDI-0680 (AstraZeneca; also known as AMP-514; *see* WO 2012/145493), TSR-042 (Tesaro Biopharmaceutical; also known as ANB011 or dostarlimab; *see* WO 2014/179664), cemiplimab (Regeneron; also known as LIBTAYO® or REGN2810; *see* WO 2015/112800 and U.S. Patent No. 9,987,500), JS001 (TAIZHOU JUNSHI PHARMA; also known as toripalimab; *see* Si-Yang Liu et al., *J. Hematol. Oncol. 10*:136 (2017)), PF-06801591 (Pfizer; also known as sasanlimab; US 2016/0159905), BGB-A317 (Beigene; also known as tislelizumab; *see* WO 2015/35606 and US 2015/0079109), BI 754091 (Boehringer Ingelheim; *see* Zettl M *et al.*, *Cancer. Res.* (2018);78(13 Suppl):Abstract 4558), INCSHR1210 (Jiangsu Hengrui Medicine; also known as SHR-1210 or camrelizumab; *see* WO 2015/085847; Si-Yang Liu et al., *J. Hematol. Oncol. 10*:136 (2017)), GLS-010 (Wuxi/Harbin Gloria Pharmaceuticals; also known as WBP3055; *see* Si-Yang Liu et al., *J. Hematol. Oncol. 10*:136 (2017)), AM-0001 (Armo), STI-1110 (Sorrento Therapeutics; *see* WO 2014/194302), AGEN2034 (Agenus; *see* WO 2017/040790), MGA012 (Macrogenics, *see* WO 2017/19846), BCD-100 (Biocad; Kaplon et al., *mAbs 10(2)*:183-203 (2018), IBI308 (Innovent; also known as sintilimab; *see* WO 2017/024465, WO 2017/025016, WO 2017/132825, and WO 2017/133540), and SSI-361 (Lyvgen Biopharma Holdings Limited, US 2018/0346569).

**[0359]** Anti-PD-1 antibodies that can be used in the methods of the disclosure also include isolated antibodies that bind specifically to human PD-1 and cross-compete for binding to human PD-1 with any anti-PD-1 antibody disclosed herein, *e.g.*, nivolumab (*see*, *e.g.*, U.S. Patent No. 8,008,449 and 8,779,105; WO 2013/173223). In some aspects, the anti-PD-1 antibody binds the same epitope as any of the anti-PD-1 antibodies described herein, *e.g.*, nivolumab.

**[0360]** In some aspects, the antibodies that cross-compete for binding to human PD-1 with, or bind to the same epitope region as, any anti-PD-1 antibody disclosed herein, *e.g.*, nivolumab, are monoclonal antibodies. For administration to human subjects, these cross-

competing antibodies are chimeric antibodies, engineered antibodies, or humanized or human antibodies. Such chimeric, engineered, humanized or human monoclonal antibodies can be prepared and isolated by methods well known in the art.

**[0361]** Anti-PD-1 antibodies that can be used in the methods of the disclosure also include antigen-binding portions of any of the above full-length antibodies.

**[0362]** Anti-PD-1 antibodies that can be used in the methods of the disclosure are antibodies that bind to PD-1 with high specificity and affinity, block the binding of PD-L1 and or PD-L2, and inhibit the immunosuppressive effect of the PD-1 signaling pathway. In any of the compositions or methods disclosed herein, an anti-PD-1 "antibody" includes an antigen-binding portion or fragment that binds to the PD-1 receptor and exhibits the functional properties similar to those of whole antibodies in inhibiting ligand binding and up-regulating the immune system. In certain aspects, the anti-PD-1 antibody or antigen-binding portion thereof cross-competes with nivolumab for binding to human PD-1.

**[0363]** In some aspects, the anti-PD-1 antibody is a full-length antibody. In some aspects, the anti-PD-1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

**[0364]** In some aspects, the anti-PD-1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

**[0365]** In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, PDR001 (spartalizumab), MEDI-0680, TSR-042, cemiplimab, JS001, PF-06801591, BGB-A317, BI 754091, INCSHR1210, GLS-010, AM-001, STI-1110, AGEN2034, MGA012, BCD-100, IBI308, SSI-361, or comprises an antigen binding portion thereof.

**[0366]** In some aspects, the anti-PD-1 antibody is formulated for intravenous administration.

**[0367]** In some aspects, the anti-PD-1 antibody is administered intravenously for about 30 minutes.

**[0368]** In some aspects, the anti-PD-1 antibody is nivolumab. Nivolumab is a fully human IgG4 (S228P) PD-1 immune checkpoint inhibitor antibody that selectively prevents interaction with PD-1 ligands (PD-L1 and PD-L2), thereby blocking the down-regulation

of antitumor T-cell functions (U.S. Patent No. 8,008,449; Wang et al., 2014 *Cancer Immunol Res. 2(9)*:846-56).

**[0369]** In some aspects, nivolumab is administered at a flat dose of about 240 mg once about every 2 weeks. In some aspects, nivolumab is administered at a flat dose of about 240 mg once about every 3 weeks. In some aspects, nivolumab is administered at a flat dose of about 360 mg once about every 3 weeks. In some aspects, nivolumab is administered at a flat dose of about 480 mg once about every 4 weeks.

**[0370]** In some aspects, nivolumab is administered intravenously at a dose of about 240 mg for about 30 minutes on Day 1 of a two-week cycle.

**[0371]** In some aspects, nivolumab is administered intravenously at a dose of about 480 mg for about 30 minutes on Day 1 of a four-week cycle.

**[0372]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14.

**[0373]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:15; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:16; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:17; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:18; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:19; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:20.

**[0374]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:13 and 14, respectively.

**[0375]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

**[0376]** In some aspects, the methods of the disclosure comprise a combination of relatlimab and nivolumab.

[0377] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4; and (b) an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14.

[0378] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:5, SEQ ID NO:6, and SEQ ID NO:7, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10, respectively, and (b) an anti-PD-1 antibody comprising a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:15, SEQ ID NO:16, and SEQ ID NO:17, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:18, SEQ ID NO:19, and SEQ ID NO:20, respectively.

[0379] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:3 and 4, respectively, and (b) an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:13 and 14, respectively.

[0380] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences set forth in SEQ ID NOs:1 and 2, respectively, and (b) an anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

[0381] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences set forth in SEQ ID NOs:21 and 2, respectively, and (b) an anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

[0382] In some aspects, the anti-PD-1 antibody is pembrolizumab. Pembrolizumab is a humanized monoclonal IgG4 (S228P) antibody directed against human cell surface

receptor PD-1. Pembrolizumab is described, for example, in U.S. Patent Nos. 8,354,509 and 8,900,587.

**[0383]** In some aspects, pembrolizumab is administered at a flat dose of about 200 mg once about every 2 weeks. In some aspects, pembrolizumab is administered at a flat dose of about 200 mg once about every 3 weeks. In some aspects, pembrolizumab is administered at a flat dose of about 400 mg once about every 6 weeks. In some aspects, pembrolizumab is administered at a flat dose of about 300 mg once about every 4-5 weeks.

**[0384]** In some aspects, pembrolizumab is administered intravenously at a dose of about 200 mg on Day 1, then once about every 3 weeks. In some aspects, pembrolizumab is administered for up to 35 cycles. In some aspects, pembrolizumab is administered intravenously at a dose of about 200 mg for about 30 minutes on Day 1 of a three-week cycle for up to 35 cycles.

**[0385]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:79, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:80.

**[0386]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:81; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:82; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:83; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:84; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:85; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:86.

**[0387]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:79 and 80, respectively.

**[0388]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising heavy and light chains comprising the sequences as set forth in SEQ ID NOs:77 and 78, respectively.

**[0389]** In some aspects, the methods of the disclosure comprise a combination of favezelimab and pembrolizumab. In some aspects, 800 mg of favezelimab and 200 mg of

pembrolizumab are administered intravenously on Day 1, then once about every 3 weeks. In some aspects, the combination of favezelimab and pembrolizumab is administered for up to 35 cycles. In some aspects, 800 mg of favezelimab and 200 mg of pembrolizumab are administered intravenously for about 30 minutes on Day 1 of a three-week cycle for up to 35 cycles.

**[0390]** In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:69, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:70; and (b) an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:79, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:80.

**[0391]** In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:71, SEQ ID NO:72, and SEQ ID NO:73, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:74, SEQ ID NO:75, and SEQ ID NO:76, respectively, and (b) an anti-PD-1 antibody comprising a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:81, SEQ ID NO:82, and SEQ ID NO:83, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:84, SEQ ID NO:85, and SEQ ID NO:86, respectively.

**[0392]** In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:69 and 70, respectively, and (b) an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:79 and 80, respectively.

**[0393]** In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences set forth in SEQ ID NOs:67 and 68, respectively, and (b) an anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:77 and 78, respectively.

[0394] In some aspects, the anti-PD-1 antibody is cemiplimab (REGN2810). Cemiplimab is described, for example, in WO 2015/112800 and U.S. Patent No. 9,987,500.

[0395] In some aspects, cemiplimab is administered intravenously at a dose of about 3 mg/kg or about 350 mg once about every 3 weeks.

[0396] In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:35, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:36.

[0397] In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:37; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:38; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:39; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:40; (e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:41; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:42.

[0398] In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:35 and 36, respectively.

[0399] In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising heavy and light chains comprising the sequences as set forth in SEQ ID NOs:33 and 34, respectively.

[0400] In some aspects, the methods of the disclosure comprise a combination of fianlimab and cemiplimab.

[0401] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:25, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:26; and (b) an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:35, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:36.

[0402] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:27, SEQ ID NO:28, and SEQ ID NO:29, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:30, SEQ ID NO:31, and SEQ ID NO:32, respectively, and (b) an anti-PD-1 antibody comprising a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:37, SEQ ID NO:38, and SEQ ID NO:39, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:40, SEQ ID NO:41, and SEQ ID NO:42, respectively.

[0403] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:25 and 26, respectively, and (b) an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:35 and 36, respectively.

[0404] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences set forth in SEQ ID NOs:23 and 24, respectively, and (b) an anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:33 and 34, respectively.

[0405] In some aspects, the anti-PD-1 antibody is spartalizumab (PDR001). Spartalizumab is described, for example, in WO 2015/112900 and U.S. Patent No. 9,683,048.

[0406] In some aspects, spartalizumab is administered intravenously at a dose of about 300 mg once about every 3 weeks or 400 mg once about every 4 weeks.

[0407] In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:59, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:60.

[0408] In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising: (a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:61; (b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:62; (c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:63; (d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:64; (e) a light chain variable region CDR2 comprising the sequence

set forth in SEQ ID NO:65; and (f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:66.

**[0409]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:59 and 60, respectively.

**[0410]** In some aspects, the methods of the disclosure comprise an anti-PD-1 antibody comprising heavy and light chains comprising the sequences as set forth in SEQ ID NOs:57 and 58, respectively.

**[0411]** In some aspects, the methods of the disclosure comprise a combination of ieramilimab and spartalizumab. In some aspects, ieramilimab is administered intravenously at a dose of about 400 mg once about every three weeks and spartalizumab is administered intravenously at a dose of about 300 mg once about every 3 weeks. In some aspects, ieramilimab is administered intravenously at a dose of about 600 mg once about every four weeks and spartalizumab is administered intravenously at a dose of about 400 mg once about every 4 weeks.

**[0412]** In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:47, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:49; and (b) an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:59, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:60.

**[0413]** In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:48, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:50; and (b) an anti-PD-1 antibody comprising CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:59, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:60.

[0414] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:51, SEQ ID NO:52, and SEQ ID NO:53, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:54, SEQ ID NO:55, and SEQ ID NO:56, respectively, and (b) an anti-PD-1 antibody comprising a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:61, SEQ ID NO:62, and SEQ ID NO:63, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:64, SEQ ID NO:65, and SEQ ID NO:66, respectively.

[0415] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:47 and 49, respectively, and (b) an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:59 and 60, respectively.

[0416] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:48 and 50, respectively, and (b) an anti-PD-1 antibody comprising heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:59 and 60, respectively.

[0417] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences set forth in SEQ ID NOs:43 and 45, respectively, and (b) an anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:57 and 58, respectively.

[0418] In some aspects, the methods of the disclosure comprise: (a) an anti-LAG-3 antibody comprising heavy and light chains comprising the sequences set forth in SEQ ID NOs:44 and 46, respectively, and (b) an anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:57 and 58, respectively.

[0419] The anti-LAG-3 antibody and the anti-PD-1 antibodies can be administered at any of the doses or combinations of doses described herein.

[0420] In some aspects, the dose of the anti-LAG-3 antibody is about 80 mg.

[0421] In some aspects, the dose of the anti-LAG-3 antibody is about 160 mg.

[0422] In some aspects, the dose of the anti-LAG-3 antibody is about 360 mg.

[0423] In some aspects, the dose of the anti-LAG-3 antibody is about 480 mg.

[0424] In some aspects, the dose of the anti-LAG-3 antibody is about 720 mg.

[0425] In some aspects, the dose of the anti-LAG-3 antibody is about 800 mg.

[0426] In some aspects, the dose of the anti-LAG-3 antibody is about 960 mg.

[0427] In some aspects, the dose of the anti-PD-1 antibody is about 200 mg.

[0428] In some aspects, the dose of the anti-PD-1 antibody is about 240 mg.

[0429] In some aspects, the dose of the anti-PD-1 antibody is about 360 mg.

[0430] In some aspects, the dose of the anti-PD-1 antibody is about 480 mg.

[0431] In some aspects, the dose of the anti-LAG-3 antibody is about 80 mg and the dose of the anti-PD-1 antibody is about 240 mg.

[0432] In some aspects, the dose of the anti-LAG-3 antibody is about 80 mg and the dose of the anti-PD-1 antibody is about 480 mg.

[0433] In some aspects, the dose of the anti-LAG-3 antibody is about 160 mg and the dose of the anti-PD-1 antibody is about 480 mg.

[0434] In some aspects, the dose of the anti-LAG-3 antibody is about 360 mg and the dose of the anti-PD-1 antibody is about 360 mg.

[0435] In some aspects, the dose of the anti-LAG-3 antibody is about 480 mg and the dose of the anti-PD-1 antibody is about 480 mg.

[0436] In some aspects, the dose of the anti-LAG-3 antibody is about 720 mg and the dose of the anti-PD-1 antibody is about 360 mg.

[0437] In some aspects, the dose of the anti-LAG-3 antibody is about 800 mg and the dose of the anti-PD-1 antibody is about 200 mg.

[0438] In some aspects, the dose of the anti-LAG-3 antibody is about 960 mg and the dose of the anti-PD-1 antibody is about 480 mg.

[0439] In some aspects, the dose of the anti-LAG-3 antibody is about 2 mg/kg and the dose of the anti-PD-1 antibody is about 6 mg/kg.

[0440] In some aspects, the dose of the anti-LAG-3 antibody is about 1 mg/kg and the dose of the anti-PD-1 antibody is about 6 mg/kg.

[0441] Provided herein is a method of treating a human subject afflicted with recurrent or refractory cHL, the method comprising administering to the subject: (a) about 160 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody, (b) about 80 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody, (c) about 2 mg/kg of an

anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, or (d) about 1 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and wherein the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

**[0442]** Provided herein is a method of treating a human subject afflicted with recurrent or refractory cHL, the method comprising administering to the subject: (a) about 2 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, or (b) about 1 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and wherein the subject has a weight of less than about 40 kg, is less than about 12 years old, or both.

**[0443]** Provided herein is a method of treating a human subject afflicted with recurrent or refractory NHL, the method comprising administering to the subject: (a) about 160 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody, (b) about 80 mg of anti-LAG-3 antibody and about 480 mg of anti-PD-1 antibody, (c) about 2 mg/kg of anti-LAG-3 antibody and about 6 mg/kg of anti-PD-1 antibody, or (d) about 1 mg/kg of anti-LAG-3 antibody and about 6 mg/kg of anti-PD-1 antibody, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable

region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and wherein the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

**[0444]** Provided herein is a method of treating a human subject afflicted with recurrent or refractory non-Hodgkin lymphoma, the method comprising administering to the subject: (a) about 2 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, or (b) about 1 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and wherein the subject has a weight of less than about 40 kg, is less than about 12 years old, or both.

**[0445]** In some aspects, (a) the anti-LAG-3 antibody comprises a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:5, SEQ ID NO:6, and SEQ ID NO:7, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10, respectively, and (b) the anti-PD-1 antibody comprises a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:15, SEQ ID NO:16, and SEQ ID NO:17, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:18, SEQ ID NO:19, and SEQ ID NO:20, respectively.

**[0446]** In some aspects, the anti-LAG-3 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:3 and 4, respectively, and the anti-PD-1 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:13 and 14, respectively.

**[0447]** In some aspects, the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:1 and 2, respectively, and the anti-PD-

1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

**[0448]** In some aspects, the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:21 and 2, respectively, and the anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

**[0449]** In some aspects, the anti-LAG-3 antibody and the anti-PD-1 antibody are administered about once every four weeks. In some aspects, the anti-LAG-3 antibody and the anti-PD-1 antibody are administered on Day 1 of every four-week cycle.

**[0450]** In some aspects, the anti-LAG-3 antibody is administered intravenously for about 30 minutes.

**[0451]** In some aspects, the anti-PD-1 antibody is administered intravenously for about 30 minutes.

**[0452]** In some aspects, a pharmaceutical composition comprising an anti-LAG-3 antibody and an anti-PD-1 antibody is administered intravenously for about 30 minutes.

**II.B.1.a.ii. Anti-PD-L1 Antibodies**

**[0453]** Anti-PD-L1 antibodies that are known in the art can be used in the methods of the disclosure. Examples of anti-PD-L1 antibodies useful in the compositions and methods of the present disclosure include the antibodies disclosed in US Patent No. 9,580,507. Anti-PD-L1 human monoclonal antibodies disclosed in U.S. Patent No. 9,580,507 have been demonstrated to exhibit one or more of the following characteristics: (a) bind to human PD-L1 with a $K_D$ of 1 x $10^{-7}$ M or less, as determined by surface plasmon resonance using a Biacore biosensor system; (b) increase T-cell proliferation in a Mixed Lymphocyte Reaction (MLR) assay; (c) increase interferon-γ production in an MLR assay; (d) increase IL-2 secretion in an MLR assay; (e) stimulate antibody responses; and (f) reverse the effect of T regulatory cells on T cell effector cells and/or dendritic cells. Anti-PD-L1 antibodies usable in the present disclosure include monoclonal antibodies that bind specifically to human PD-L1 and exhibit at least one, in some aspects, at least five, of the preceding characteristics.

**[0454]** Anti-PD-L1 antibodies that can be used in the methods of the disclosure include BMS-936559 (also known as 12A4, MDX-1105; *see*, *e.g.*, U.S. Patent No. 7,943,743 and WO 2013/173223), atezolizumab (Roche; also known as TECENTRIQ®; MPDL3280A,

RG7446; *see* US 8,217,149; *see*, *also*, Herbst et al. (2013) J Clin Oncol 31(suppl):3000), durvalumab (AstraZeneca; also known as IMFINZI™, MEDI-4736; *see* WO 2011/066389), avelumab (Pfizer; also known as BAVENCIO®, MSB-0010718C; *see* WO 2013/079174), STI-1014 (Sorrento; *see* WO2013/181634), CX-072 (Cytomx; *see* WO2016/149201), KN035 (3D Med/Alphamab; *see* Zhang et al., *Cell Discov. 7*:3 (March 2017), LY3300054 (Eli Lilly Co.; *see*, *e.g.*, WO 2017/034916), BGB-A333 (BeiGene; *see* Desai et al., *JCO 36 (15suppl)*:TPS3113 (2018)), ICO 36, FAZ053 (Novartis), and CK-301 (Checkpoint Therapeutics; *see* Gorelik et al., AACR:Abstract 4606 (Apr 2016)).

**[0455]** Anti-PD-L1 antibodies that can be used in the methods of the disclosure also include isolated antibodies that bind specifically to human PD-L1 and cross-compete for binding to human PD-L1 with any anti-PD-L1 antibody disclosed herein, *e.g.*, atezolizumab, durvalumab, and/or avelumab. In some aspects, the anti-PD-L1 antibody binds the same epitope as any of the anti-PD-L1 antibodies described herein, *e.g.*, atezolizumab, durvalumab, and/or avelumab. In certain aspects, the antibodies that cross-compete for binding to human PD-L1 with, or bind to the same epitope region as, any anti-PD-L1 antibody disclosed herein, *e.g.*, atezolizumab, durvalumab, and/or avelumab, are monoclonal antibodies. For administration to human subjects, these cross-competing antibodies are chimeric antibodies, engineered antibodies, or humanized or human antibodies. Such chimeric, engineered, humanized or human monoclonal antibodies can be prepared and isolated by methods well known in the art.

**[0456]** Anti-PD-L1 antibodies that can be used in the methods of the disclosure also include antigen-binding portions of any of the above full-length antibodies.

**[0457]** Anti-PD-L1 antibodies that can be used in the methods of the disclosure are antibodies that bind to PD-L1 with high specificity and affinity, block the binding of PD-1, and inhibit the immunosuppressive effect of the PD-1 signaling pathway. In any of the compositions or methods disclosed herein, an anti-PD-L1 "antibody" includes an antigen-binding portion or fragment that binds to PD-L1 and exhibits the functional properties similar to those of whole antibodies in inhibiting receptor binding and up-regulating the immune system. In certain aspects, the anti-PD-L1 antibody or antigen-binding portion thereof cross-competes with atezolizumab, durvalumab, and/or avelumab for binding to human PD-L1.

[0458] In some aspects, an anti-PD-L1 antibody is substituted for the anti-PD-1 antibody in any of the methods disclosed herein.

[0459] In some aspects, the anti-PD-L1 antibody is a full-length antibody.

[0460] In some aspects, the anti-PD-L1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

[0461] In some aspects, the anti-PD-L1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

[0462] In some aspects, the anti-PD-L1 antibody is BMS-936559, atezolizumab, durvalumab, avelumab, STI-1014, CX-072, KN035, LY3300054, BGB-A333, ICO 36, FAZ053, CK-301, or comprises an antigen binding portion thereof.

[0463] In some aspects, the PD-L1 antibody is atezolizumab. Atezolizumab is a fully humanized IgG1 monoclonal anti-PD-L1 antibody. In some aspects, atezolizumab is administered as a flat dose of about 800 mg once about every 2 weeks. In some aspects, atezolizumab is administered as a flat dose of about 840 mg once about every 2 weeks.

[0464] In some aspects, atezolizumab is administered intravenously at a dose of about 1,200 mg on Day 1 of a three-week cycle.

[0465] In some aspects, atezolizumab is administered intravenously at a dose of about 1,200 mg on Day 1 of a three-week cycle, and bevacizumab is administered at a dose of about 15 mg/kg on Day 1 of each cycle.

[0466] In some aspects, the PD-L1 antibody is durvalumab. Durvalumab is a human IgG1 kappa monoclonal anti-PD-L1 antibody. In some aspects, durvalumab is administered at a dose of about 10 mg/kg once about every 2 weeks. In some aspects, durvalumab is administered at a dose of about 10 mg/kg once about every 2 weeks for up to 12 months. In some aspects, durvalumab is administered as a flat dose of about 800 mg/kg once about every 2 weeks. In some aspects, durvalumab is administered as a flat dose of about 1200 mg/kg once about every 3 weeks.

[0467] In some aspects, the PD-L1 antibody is avelumab. Avelumab is a human IgG1 lambda monoclonal anti-PD-L1 antibody. In some aspects, avelumab is administered as a flat dose of about 800 mg once about every 2 weeks.

### II.B.1.b. CTLA-4 inhibitors

**[0468]** In some aspects, the checkpoint inhibitor a disclosed herein comprises a CTLA-4 inhibitor. In some aspects, the CTLA-4 inhibitor is an anti-CTLA-4 antibody.

**[0469]** Anti-CTLA-4 antibodies that can be used in the methods of the disclosure bind to human CTLA-4 and disrupt the interaction of CTLA-4 with a human B7 receptor. Because the interaction of CTLA-4 with B7 transduces a signal leading to inactivation of T-cells bearing the CTLA-4 receptor, disruption of the interaction effectively induces, enhances, or prolongs the activation of such T cells, thereby inducing, enhancing or prolonging an immune response.

**[0470]** Human monoclonal antibodies that bind specifically to CTLA-4 with high affinity have been disclosed in U.S. Patent Nos. 6,984,720. Other anti-CTLA-4 monoclonal antibodies have been described in, for example, U.S. Patent Nos. 5,977,318, 6,051,227, 6,682,736, and 7,034,121 and International Publication Nos. WO 2012/122444, WO 2007/113648, WO 2016/196237, and WO 2000/037504, each of which is incorporated by reference herein in its entirety. The anti-CTLA-4 human monoclonal antibodies disclosed in U.S. Patent No. Nos. 6,984,720 have been demonstrated to exhibit one or more of the following characteristics: (a) binds specifically to human CTLA-4 with a binding affinity reflected by an equilibrium association constant ($K_a$) of at least about $10^7$ $M^{-1}$, or about $10^9$ $M^{-1}$, or about $10^{10}$ $M^{-1}$ to $10^{11}$ $M^{-1}$ or higher, as determined by Biacore analysis; (b) a kinetic association constant ($k_a$) of at least about $10^3$, about $10^4$, or about $10^5$ $m^{-1}$ $s^{-1}$; (c) a kinetic disassociation constant ($k_d$) of at least about $10^3$, about $10^4$, or about $10^5$ $m^{-1}$ $s^{-1}$; and (d) inhibits the binding of CTLA-4 to B7-1 (CD80) and B7-2 (CD86). Anti-CTLA-4 antibodies useful for the present disclosure include monoclonal antibodies that bind specifically to human CTLA-4 and exhibit at least one, at least two, or at least three of the preceding characteristics.

**[0471]** Anti-CTLA-4 antibodies that can be used in the methods of the disclosure include ipilimumab (also known as YERVOY®, MDX-010, 10D1; *see* U.S. Patent No. 6,984,720), MK-1308 (Merck), AGEN-1884 (Agenus Inc.; *see* WO 2016/196237), and tremelimumab (AstraZeneca; also known as ticilimumab, CP-675,206; *see* WO 2000/037504 and Ribas, *Update Cancer Ther. 2(3)*: 133-39 (2007)).

**[0472]** In some aspects, the anti-CTLA-4 antibody binds specifically to human CTLA-4 and cross-competes for binding to human CTLA-4 with any anti-CTLA-4 antibody

disclosed herein, *e.g.*, ipilimumab and/or tremelimumab. In some aspects, the anti-CTLA-4 antibody binds the same epitope as any of the anti-CTLA-4 antibodies described herein, *e.g.*, ipilimumab and/or tremelimumab.

**[0473]** In some aspects, the antibodies that cross-compete for binding to human CTLA-4 with, or bind to the same epitope region as, any anti-CTLA-4 antibody disclosed herein, *e.g.*, ipilimumab and/or tremelimumab, are monoclonal antibodies. For administration to human subjects, these cross-competing antibodies are chimeric antibodies, engineered antibodies, or humanized or human antibodies.

**[0474]** Anti-CTLA-4 antibodies that can be used in the methods of the disclosure also include antigen-binding portions of any of the above full-length antibodies.

**[0475]** In some aspects, the anti-CTLA-4 antibody is a full-length antibody. In some aspects, the anti-CTLA-4 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody. In some aspects, the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

**[0476]** In some aspects, the anti-CTLA-4 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

**[0477]** In some aspects, the anti-CTLA-4 antibody is ipilimumab, tremelimumab, MK-1308, AGEN-1884, or comprises an antigen binding portion thereof.

**[0478]** In some aspects, the anti-CTLA-4 antibody is ipilimumab. Ipilimumab is a fully human, IgG1 monoclonal antibody that blocks the binding of CTLA-4 to its B7 ligands, thereby stimulating T cell activation. In some aspects, ipilimumab is administered at a dose of about 3 mg/kg once about every 3 weeks. In some aspects, ipilimumab is administered at a dose of about 10 mg/kg once about every 3 weeks. In some aspects, ipilimumab is administered at a dose of about 10 mg/kg once about every 12 weeks. In some aspects, the ipilimumab is administered for four doses. In some aspects, ipilimumab is administered on Day 1 of each cycle.

### III. Pharmaceutical Compositions

**[0479]** Therapeutic agents of the present disclosure can be constituted in a composition, *e.g.*, a pharmaceutical composition containing an inhibitor, antibody, and/or agent as disclosed herein and a pharmaceutically acceptable carrier. As used herein, a "pharmaceutically acceptable carrier" includes any and all solvents, dispersion media,

coatings, antibacterial and antifungal agents, isotonic and absorption delaying agents, and the like that are physiologically compatible.

**[0480]** In some aspects, the carrier for a composition containing an inhibitor, antibody, and/or agent as disclosed herein is suitable for intravenous, intramuscular, subcutaneous, parenteral, spinal or epidermal administration (*e.g.*, by injection or infusion). In some aspects, the carrier is suitable for non-parenteral, *e.g.*, oral, administration. In some aspects, a subcutaneous injection is based on Halozyme Therapeutics' ENHANZE® drug-delivery technology (*see* U.S. Patent No. 7,767,429, which is incorporated by reference herein in its entirety). ENHANZE® uses a co-formulation of an antibody with recombinant human hyaluronidase enzyme (rHuPH20), which removes traditional limitations on the volume of biologics and drugs that can be delivered subcutaneously due to the extracellular matrix (*see* U.S. Patent No. 7,767,429). A pharmaceutical composition of the disclosure can include one or more pharmaceutically acceptable salts, anti-oxidant, aqueous and non-aqueous carriers, and/or adjuvants such as preservatives, wetting agents, emulsifying agents and dispersing agents. In some aspects, the pharmaceutical composition for the present disclosure can further comprise recombinant human hyaluronidase enzyme, e.g., rHuPH20.

**[0481]** Treatment is continued as long as clinical benefit is observed or until unacceptable toxicity or disease progression occurs. Dosage and frequency vary depending on the half-life of the inhibitor, antibody, and/or agent in the subject. In general, human antibodies show the longest half-life, followed by humanized antibodies, chimeric antibodies, and nonhuman antibodies. The dosage and frequency of administration can vary depending on whether the treatment is prophylactic or therapeutic. In prophylactic applications, a relatively low dosage is typically administered at relatively infrequent intervals over a long period of time. Some patients continue to receive treatment for the rest of their lives. In therapeutic applications, a relatively high dosage at relatively short intervals is sometimes required until progression of the disease is reduced or terminated, and preferably until the patient shows partial or complete amelioration of symptoms of disease. Thereafter, the patient can be administered a prophylactic regime.

**[0482]** Actual dosage levels of the active ingredients (*i.e.*, inhibitors, antibodies, and/or agents) in the pharmaceutical compositions of the present disclosure can be varied so as to obtain an amount of the active ingredient which is effective to achieve the desired therapeutic response for a particular patient, composition, and mode of administration,

without being unduly toxic to the patient. The selected dosage level will depend upon a variety of pharmacokinetic factors including the activity of the particular compositions of the present disclosure employed, the route of administration, the time of administration, the rate of excretion of the particular compound being employed, the duration of the treatment, other drugs, compounds and/or materials used in combination with the particular compositions employed, the age, sex, weight, condition, general health and prior medical history of the patient being treated, and like factors well known in the medical arts. A composition of the present disclosure can be administered via one or more routes of administration using one or more of a variety of methods well known in the art. As will be appreciated by the skilled artisan, the route and/or mode of administration will vary depending upon the desired results.

**[0483]** Provided herein is a pharmaceutical composition comprising an anti-LAG-3 antibody and an anti-PD-1 antibody as described herein at any of the doses or combinations of doses described herein.

**[0484]** In some aspects, the pharmaceutical composition is for treating a human subject with a hematological cancer as described herein.

**[0485]** In some aspects, a method for treating a human subject with a hematological cancer as described herein comprises administering a pharmaceutical composition as described herein.

**[0486]** In some aspects, the pharmaceutical composition comprises a dose of relatlimab and a dose of an anti-PD-1 antibody as described herein. In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, or spartalizumab. In some aspects, the anti-PD-1 antibody is nivolumab.

**[0487]** In some aspects, the pharmaceutical composition comprises a dose of favezelimab and a dose of an anti-PD-1 antibody as described herein. In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, or spartalizumab. In some aspects, the anti-PD-1 antibody is pembrolizumab.

**[0488]** In some aspects, the pharmaceutical composition comprises a dose of fianlimab and a dose of an anti-PD-1 antibody as described herein. In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, or spartalizumab. In some aspects, the anti-PD-1 antibody is cemiplimab.

**[0489]** In some aspects, the pharmaceutical composition comprises a dose of ieramilimab and a dose of an anti-PD-1 antibody as described herein. In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, or spartalizumab. In some aspects, the anti-PD-1 antibody is spartalizumab.

**[0490]** In some aspects, the pharmaceutical composition comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 1:1, about 1:2, about 1:3, about 1:4, about 1:5, about 1:6, about 1:7, about 1:8, about 1:9, about 1:10, about 1:15, about 1:20, about 1:30, about 1:40, about 1:50, about 1:60, about 1:70, about 1:80, about 1:90, about 1:100, about 1:120, about 1:140, about 1:160, about 1:180, about 1:200, about 200:1, about 180:1, about 160:1, about 140:1, about 120:1, about 100:1, about 90:1, about 80:1, about 70:1, about 60:1, about 50:1, about 40:1, about 30:1, about 20:1, about 15:1, about 10:1, about 9:1, about 8:1, about 7:1, about 6:1, about 5:1, about 4:1, about 3:1, or about 2:1.

**[0491]** In some aspects, the pharmaceutical composition comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 1:6.

**[0492]** In some aspects, the pharmaceutical composition comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 1:3.

**[0493]** In some aspects, the pharmaceutical composition comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 1:1

**[0494]** In some aspects, the pharmaceutical composition comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 2:1.

**[0495]** In some aspects, the pharmaceutical composition comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 4:1.

**[0496]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 20 mg/mL, about 25 mg/mL, about 30 mg/mL, about 35 mg/mL, about 40 mg/mL, about 45 mg/mL, about 50 mg/mL, about 55 mg/mL, about 60 mg/mL, about 65 mg/mL, about 70 mg/mL, about 75 mg/mL, about 80 mg/mL, about 85 mg/mL, about 90 mg/mL, about 95 mg/mL, about 100 mg/mL, about 105 mg/mL, about 110 mg/mL, about 115 mg/mL, about 120 mg/mL, about 125 mg/mL, about 130 mg/mL, about 135 mg/mL, about 140 mg/mL, about 145 mg/mL, about 150 mg/mL, about 155 mg/mL, about 160 mg/mL, about 165 mg/mL, about 170 mg/mL, about 175 mg/mL, about 180 mg/mL, about 185 mg/mL, about 190 mg/mL, about 195 mg/mL, about 200 mg/mL, about 205 mg/mL, about 210 mg/mL, about 215 mg/mL, about 220 mg/mL, about 225

mg/mL, about 230 mg/mL, about 235 mg/mL, about 240 mg/mL, about 245 mg/mL, about 250 mg/mL, about 255 mg/mL, about 260 mg/mL, about 265 mg/mL, about 270 mg/mL, about 275 mg/mL, about 280 mg/mL, about 285 mg/mL, about 290 mg/mL, about 295 mg/mL, about 300 mg/mL, about 305 mg/mL, about 310 mg/mL, about 315 mg/mL, about 320 mg/mL, about 325 mg/mL, about 330 mg/mL, about 335 mg/mL, about 340 mg/mL, about 345 mg/mL, about 350 mg/mL, about 355 mg/mL, about 360 mg/mL, about 365 mg/mL, about 370 mg/mL, about 375 mg/mL, about 380 mg/mL, about 385 mg/mL, about 390 mg/mL, about 395 mg/mL, about 400 mg/mL, about 50 mg, about 60 mg, about 70 mg, about 80 mg, about 90 mg, about 100 mg, about 110 mg, about 120 mg, about 130 mg, about 140 mg, about 150 mg, about 160 mg, about 170 mg, about 180 mg, about 190 mg, about 200 mg, about 210 mg, about 220 mg, about 230 mg, about 240 mg, about 250 mg, about 260 mg, about 270 mg, about 280 mg, about 290 mg, about 300 mg, about 310 mg, about 320 mg, about 330 mg, about 340 mg, about 350 mg, about 360 mg, about 370 mg, about 380 mg, about 390 mg, about 400 mg, about 410 mg, about 420 mg, about 430 mg, about 440 mg, about 450 mg, about 460 mg, about 470 mg, about 480 mg, about 490 mg, about 500 mg, about 510 mg, about 520 mg, about 530 mg, about 540 mg, about 550 mg, about 560 mg, about 570 mg, about 580 mg, about 590 mg, about 600 mg, about 610 mg, about 620 mg, about 630 mg, about 640 mg, about 650 mg, about 660 mg, about 670 mg, about 680 mg, about 690 mg, about 700 mg, about 710 mg, about 720 mg, about 730 mg, about 740 mg, about 750 mg, about 760 mg, about 770 mg, about 780 mg, about 790 mg, about 800 mg, about 810 mg, about 820 mg, about 830 mg, about 840 mg, about 850 mg, about 860 mg, about 870 mg, about 880 mg, about 890 mg, about 900 mg, about 910 mg, about 920 mg, about 930 mg, about 940 mg, about 950 mg, about 960 mg, about 970 mg, about 980 mg, about 990 mg, about 1000 mg, about 1010 mg, about 1020 mg, about 1030 mg, about 1040 mg, about 1050 mg, about 1060 mg, about 1070 mg, about 1080 mg, about 1090 mg, about 1100 mg, about 1110 mg, about 1120 mg, about 1130 mg, about 1140 mg, about 1150 mg, about 1160 mg, about 1170 mg, about 1180 mg, about 1190 mg, about 1200 mg, about 1210 mg, about 1220 mg, about 1230 mg, about 1240 mg, about 1250 mg, about 1260 mg, about 1270 mg, about 1280 mg, about 1290 mg, about 1300 mg, about 1310 mg, about 1320 mg, about 1330 mg, about 1340 mg, about 1350 mg, about 1360 mg, about 1370 mg, about 1380 mg, about 1390 mg, about 1400 mg, about 1410 mg, about 1420 mg, about 1430 mg, about 1440 mg, about 1450 mg, about 1460 mg, about 1470 mg,

about 1480 mg, about 1490 mg, about 1500 mg, about 1510 mg, about 1520 mg, about 1530 mg, about 1540 mg, about 1550 mg, about 1560 mg, about 1570 mg, about 1580 mg, about 1590 mg, about 1600 mg, about 1610 mg, about 1620 mg, about 1630 mg, about 1640 mg, about 1650 mg, about 1660 mg, about 1670 mg, about 1680 mg, about 1690 mg, about 1700 mg, about 1710 mg, about 1720 mg, about 1730 mg, about 1740 mg, about 1750 mg, about 1760 mg, about 1770 mg, or about 1780 mg.

**[0497]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 25 mg/mL.

**[0498]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 50 mg/mL.

**[0499]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 150 mg/mL.

**[0500]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 50 mg.

**[0501]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 320 mg.

**[0502]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 560 mg.

**[0503]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 640 mg.

**[0504]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 720 mg.

**[0505]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 960 mg.

**[0506]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 1000 mg.

**[0507]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 1080 mg.

**[0508]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the pharmaceutical composition is about 1440 mg.

**[0509]** In some aspects, the pharmaceutical composition comprises about 10 mg/mL, about 12.5 mg/mL, about 15 mg/mL, about 17.5 mg/mL, about 20 mg/mL, about 22.5 mg/mL,

about 25 mg/mL, about 27.5 mg/mL, about 30 mg/mL, about 32.5 mg/mL, about 35 mg/mL, about 37.5 mg/mL, about 40 mg/mL, about 42.5 mg/mL, about 45 mg/mL, about 47.5 mg/mL, about 50 mg/mL, about 55 mg/mL, about 60 mg/mL, about 65 mg/mL, about 70 mg/mL, about 75 mg/mL, about 80 mg/mL, about 85 mg/mL, about 90 mg/mL, about 95 mg/mL, about 100 mg/mL, about 105 mg/mL, about 110 mg/mL, about 115 mg/mL, about 120 mg/mL, about 125 mg/mL, 130 mg/mL, about 135 mg/mL, about 140 mg/mL, about 145 mg/mL, about 150 mg/mL, about 155 mg/mL, about 160 mg/mL, about 165 mg/mL, about 170 mg/mL, about 175 mg/mL, about 180 mg/mL, about 185 mg/mL, about 190 mg/mL, about 195 mg/mL, about 200 mg/mL, about 7 mg, about 21 mg, about 40 mg, about 70 mg, about 80 mg, about 160 mg, about 200 mg, about 210 mg, about 300 mg, about 400 mg, about 480 mg, about 500 mg, about 600 mg, about 700 mg, about 800 mg, about 900 mg, about 960 mg, about 1000 mg, about 1100 mg, about 1200 mg, or about 1300 mg of an anti-LAG-3 antibody. In some aspects, the pharmaceutical composition comprises about 5 mg/mL, about 10 mg/mL, about 12.5 mg/mL, about 15 mg/mL, about 17.5 mg/mL, about 20 mg/mL, about 22.5 mg/mL, about 25 mg/mL, about 27.5 mg/ml, about 30 mg/mL, about 32.5 mg/mL, about 35 mg/mL, about 37.5 mg/mL, about 40 mg/mL, about 42.5 mg/mL, about 45 mg/mL, about 47.5 mg/mL, about 50 mg/mL, about 55 mg/mL, about 60 mg/mL, about 65 mg/mL, about 70 mg/mL, about 75 mg/mL, about 80 mg/mL, about 85 mg/mL, about 90 mg/mL, about 95 mg/mL, about 100 mg/mL, about 105 mg/mL, about 110 mg/mL, about 115 mg/mL, about 120 mg/mL, about 125 mg/mL, 130 mg/mL, about 135 mg/mL, about 140 mg/mL, about 145 mg/mL, about 150 mg/mL, about 155 mg/mL, about 160 mg/mL, about 165 mg/mL, about 170 mg/mL, about 175 mg/mL, about 180 mg/mL, about 185 mg/mL, about 190 mg/mL, about 195 mg/mL, about 200 mg/mL, about 10 mg, about 40 mg, about 100 mg, about 200 mg, about 240 mg, about 300 mg, about 350 mg, about 360 mg, about 400 mg, or about 480 mg of an anti-PD-1 antibody.

**[0510]** In some aspects, the pharmaceutical composition comprises about 12.5 mg/mL of an anti-LAG-3 antibody and about 37.5 mg/mL of an anti-PD-1 antibody.

**[0511]** In some aspects, the pharmaceutical composition comprises about 20 mg/mL of an anti-LAG-3 antibody and about 5 mg/mL of an anti-PD-1 antibody.

**[0512]** In some aspects, the pharmaceutical composition comprises about 75 mg/mL of an anti-LAG-3 antibody and about 75 mg/mL of an anti-PD-1 antibody.

[0513] In some aspects, the pharmaceutical composition comprises about 100 mg/mL of an anti-LAG-3 antibody and about 50 mg/mL of an anti-PD-1 antibody.

[0514] In some aspects, the pharmaceutical composition comprises about 80 mg of an anti-LAG-3 antibody and about 240 mg of an anti-PD-1 antibody.

[0515] In some aspects, the pharmaceutical composition comprises about 80 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody.

[0516] In some aspects, the pharmaceutical composition comprises about 160 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody.

[0517] In some aspects, the pharmaceutical composition comprises about 360 mg of an anti-LAG-3 antibody and about 360 mg of an anti-PD-1 antibody.

[0518] In some aspects, the pharmaceutical composition comprises about 480 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody.

[0519] In some aspects, the pharmaceutical composition comprises about 720 mg of an anti-LAG-3 antibody and about 360 mg of an anti-PD-1 antibody.

[0520] In some aspects, the pharmaceutical composition comprises about 800 mg of an anti-LAG-3 antibody and about 200 mg of an anti-PD-1 antibody.

[0521] In some aspects, the pharmaceutical composition comprises about 960 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody.

[0522] In some aspects, the pharmaceutical composition comprises from about 5 mM to about 50 mM of histidine, from about 50 mM to about 300 mM of sucrose, from about 5 μM to about 1 mM of diethylenetriaminepentaacetic acid (DTPA) or ethylenediaminetetraacetic acid (EDTA), and from about 0.001% to about 1% (w/v) of polysorbate or poloxamer (*e.g.*, polysorbate 80 (PS80), polysorbate 20 (PS20), poloxamer 188 (PX188), or any combination thereof).

[0523] In some aspects, the pharmaceutical composition comprises about 20 mM histidine, about 250 mM sucrose, about 50 μM DTPA, and 0.05% PS80.

[0524] In some aspects, the pH of the pharmaceutical composition is from about 5 to about 6.5. In some aspects, the pH is about 5.3 to about 6.3. In some aspects, the pH is 5.8. In some aspects, the pH is 5.7.

[0525] Provided herein is a vial, syringe, or intravenous bag comprising a pharmaceutical composition as described herein. In some aspects, the disclosure includes an autoinjector comprising a pharmaceutical composition described herein.

[0526] In some aspects, a vial comprises a pharmaceutical composition as described herein, and the vial further comprises a stopper and a seal. In some aspects, the total volume in the vial is about 5 mL, about 6 mL, about 7 mL, about 8 mL, about 9 mL, about 10 mL, about 11 mL, about 12 mL, about 13 mL, about 14 mL, about 15 mL, about 16 mL, about 17 mL, about 18 mL, about 19 mL, or about 20 mL.

## IV. Kits

[0527] Also within the scope of the present invention are kits for treating a human subject with a hematological cancer comprising any of the antibodies, therapeutic agents, and/or anti-cancer therapies described herein.

[0528] Kits typically include a label indicating the intended use of the contents of the kit and instructions for use. The term "label" includes any writing, or recorded material supplied on or with the kit, or which otherwise accompanies the kit.

[0529] Provided herein is a kit for treating a human subject afflicted with a hematological cancer, comprising: (a) a dose of an anti-LAG-3 antibody; (b) a dose of an anti-PD-1 antibody; and (c) instructions for using the anti-LAG-3 antibody and the anti-PD-1 antibody in a method for treating a human subject afflicted with a hematological cancer.

[0530] The anti-LAG-3 antibody and the anti-PD-1 antibodies can be provided at any of the doses or combinations of doses described herein.

[0531] In some aspects, the kit comprises a dose of relatlimab and a dose of an anti-PD-1 antibody as described herein. In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, or spartalizumab. In some aspects, the anti-PD-1 antibody is nivolumab.

[0532] In some aspects, the kit comprises a dose of favezelimab and a dose of an anti-PD-1 antibody as described herein. In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, or spartalizumab. In some aspects, the anti-PD-1 antibody is pembrolizumab.

[0533] In some aspects, the kit comprises fianlimab and an anti-PD-1 antibody as described herein. In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, or spartalizumab. In some aspects, the anti-PD-1 antibody is cemiplimab.

[0534] In some aspects, the kit comprises ieramilimab and an anti-PD-1 antibody as described herein. In some aspects, the anti-PD-1 antibody is nivolumab, pembrolizumab, cemiplimab, or spartalizumab. In some aspects, the anti-PD-1 antibody is spartalizumab.

[0535] In some aspects, the kit comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 1:1, about 1:2, about 1:3, about 1:4, about 1:5, about 1:6, about 1:7, about 1:8, about 1:9, about 1:10, about 1:15, about 1:20, about 1:30, about 1:40, about 1:50, about 1:60, about 1:70, about 1:80, about 1:90, about 1:100, about 1:120, about 1:140, about 1:160, about 1:180, about 1:200, about 200:1, about 180:1, about 160:1, about 140:1, about 120:1, about 100:1, about 90:1, about 80:1, about 70:1, about 60:1, about 50:1, about 40:1, about 30:1, about 20:1, about 15:1, about 10:1, about 9:1, about 8:1, about 7:1, about 6:1, about 5:1, about 4:1, about 3:1, or about 2:1.

[0536] In some aspects, the kit comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 1:6.

[0537] In some aspects, the kit comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 1:3.

[0538] In some aspects, the kit comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 1:1

[0539] In some aspects, the kit comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 2:1.

[0540] In some aspects, the kit comprises a ratio of anti-LAG-3 antibody to anti-PD-1 antibody of about 4:1.

[0541] In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 20 mg/mL, about 25 mg/mL, about 30 mg/mL, about 35 mg/mL, about 40 mg/mL, about 45 mg/mL, about 50 mg/mL, about 55 mg/mL, about 60 mg/mL, about 65 mg/mL, about 70 mg/mL, about 75 mg/mL, about 80 mg/mL, about 85 mg/mL, about 90 mg/mL, about 95 mg/mL, about 100 mg/mL, about 105 mg/mL, about 110 mg/mL, about 115 mg/mL, about 120 mg/mL, about 125 mg/mL, about 130 mg/mL, about 135 mg/mL, about 140 mg/mL, about 145 mg/mL, about 150 mg/mL, about 155 mg/mL, about 160 mg/mL, about 165 mg/mL, about 170 mg/mL, about 175 mg/mL, about 180 mg/mL, about 185 mg/mL, about 190 mg/mL, about 195 mg/mL, about 200 mg/mL, about 205 mg/mL, about 210 mg/mL, about 215 mg/mL, about 220 mg/mL, about 225 mg/mL, about 230 mg/mL, about 235 mg/mL, about 240 mg/mL, about 245 mg/mL, about 250 mg/mL, about 255 mg/mL, about 260 mg/mL, about 265 mg/mL, about 270 mg/mL, about 275 mg/mL, about 280 mg/mL, about 285 mg/mL, about 290 mg/mL, about 295 mg/mL, about 300 mg/mL, about 305 mg/mL, about 310 mg/mL, about 315 mg/mL, about 320 mg/mL, about 325

mg/mL, about 330 mg/mL, about 335 mg/mL, about 340 mg/mL, about 345 mg/mL, about 350 mg/mL, about 355 mg/mL, about 360 mg/mL, about 365 mg/mL, about 370 mg/mL, about 375 mg/mL, about 380 mg/mL, about 385 mg/mL, about 390 mg/mL, about 395 mg/mL, about 400 mg/mL, about 50 mg, about 60 mg, about 70 mg, about 80 mg, about 90 mg, about 100 mg, about 110 mg, about 120 mg, about 130 mg, about 140 mg, about 150 mg, about 160 mg, about 170 mg, about 180 mg, about 190 mg, about 200 mg, about 210 mg, about 220 mg, about 230 mg, about 240 mg, about 250 mg, about 260 mg, about 270 mg, about 280 mg, about 290 mg, about 300 mg, about 310 mg, about 320 mg, about 330 mg, about 340 mg, about 350 mg, about 360 mg, about 370 mg, about 380 mg, about 390 mg, about 400 mg, about 410 mg, about 420 mg, about 430 mg, about 440 mg, about 450 mg, about 460 mg, about 470 mg, about 480 mg, about 490 mg, about 500 mg, about 510 mg, about 520 mg, about 530 mg, about 540 mg, about 550 mg, about 560 mg, about 570 mg, about 580 mg, about 590 mg, about 600 mg, about 610 mg, about 620 mg, about 630 mg, about 640 mg, about 650 mg, about 660 mg, about 670 mg, about 680 mg, about 690 mg, about 700 mg, about 710 mg, about 720 mg, about 730 mg, about 740 mg, about 750 mg, about 760 mg, about 770 mg, about 780 mg, about 790 mg, about 800 mg, about 810 mg, about 820 mg, about 830 mg, about 840 mg, about 850 mg, about 860 mg, about 870 mg, about 880 mg, about 890 mg, about 900 mg, about 910 mg, about 920 mg, about 930 mg, about 940 mg, about 950 mg, about 960 mg, about 970 mg, about 980 mg, about 990 mg, about 1000 mg, about 1010 mg, about 1020 mg, about 1030 mg, about 1040 mg, about 1050 mg, about 1060 mg, about 1070 mg, about 1080 mg, about 1090 mg, about 1100 mg, about 1110 mg, about 1120 mg, about 1130 mg, about 1140 mg, about 1150 mg, about 1160 mg, about 1170 mg, about 1180 mg, about 1190 mg, about 1200 mg, about 1210 mg, about 1220 mg, about 1230 mg, about 1240 mg, about 1250 mg, about 1260 mg, about 1270 mg, about 1280 mg, about 1290 mg, about 1300 mg, about 1310 mg, about 1320 mg, about 1330 mg, about 1340 mg, about 1350 mg, about 1360 mg, about 1370 mg, about 1380 mg, about 1390 mg, about 1400 mg, about 1410 mg, about 1420 mg, about 1430 mg, about 1440 mg, about 1450 mg, about 1460 mg, about 1470 mg, about 1480 mg, about 1490 mg, about 1500 mg, about 1510 mg, about 1520 mg, about 1530 mg, about 1540 mg, about 1550 mg, about 1560 mg, about 1570 mg, about 1580 mg, about 1590 mg, about 1600 mg, about 1610 mg, about 1620 mg, about 1630 mg, about 1640 mg, about 1650 mg, about 1660 mg, about 1670 mg, about 1680 mg, about 1690 mg, about 1700 mg,

about 1710 mg, about 1720 mg, about 1730 mg, about 1740 mg, about 1750 mg, about 1760 mg, about 1770 mg, or about 1780 mg.

**[0542]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 25 mg/mL.

**[0543]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 50 mg/mL.

**[0544]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 150 mg/mL.

**[0545]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 50 mg.

**[0546]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 320 mg.

**[0547]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 560 mg.

**[0548]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 640 mg.

**[0549]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 720 mg.

**[0550]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 960 mg.

**[0551]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 1000 mg.

**[0552]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 1080 mg.

**[0553]** In some aspects, the total amount of anti-LAG-3 and anti-PD-1 antibodies in the kit is about 1440 mg.

**[0554]** In some aspects, the kit comprises about 10 mg/mL, about 12.5 mg/mL, about 15 mg/mL, about 17.5 mg/mL, about 20 mg/mL, about 22.5 mg/mL, about 25 mg/mL, about 27.5 mg/mL, about 30 mg/mL, about 32.5 mg/mL, about 35 mg/mL, about 37.5 mg/mL, about 40 mg/mL, about 42.5 mg/mL, about 45 mg/mL, about 47.5 mg/mL, about 50 mg/mL, about 55 mg/mL, about 60 mg/mL, about 65 mg/mL, about 70 mg/mL, about 75 mg/mL, about 80 mg/mL, about 85 mg/mL, about 90 mg/mL, about 95 mg/mL, about 100

mg/mL, about 105 mg/mL, about 110 mg/mL, about 115 mg/mL, about 120 mg/mL, about 125 mg/mL, 130 mg/mL, about 135 mg/mL, about 140 mg/mL, about 145 mg/mL, about 150 mg/mL, about 155 mg/mL, about 160 mg/mL, about 165 mg/mL, about 170 mg/mL, about 175 mg/mL, about 180 mg/mL, about 185 mg/mL, about 190 mg/mL, about 195 mg/mL, about 200 mg/mL, about 7 mg, about 21 mg, about 40 mg, about 70 mg, about 80 mg, about 160 mg, about 200 mg, about 210 mg, about 300 mg, about 400 mg, about 480 mg, about 500 mg, about 600 mg, about 700 mg, about 800 mg, about 900 mg, about 960 mg, about 1000 mg, about 1100 mg, about 1200 mg, or about 1300 mg of an anti-LAG-3 antibody. In some aspects, the kit comprises about 5 mg/mL, about 10 mg/mL, about 12.5 mg/mL, about 15 mg/mL, about 17.5 mg/mL, about 20 mg/mL, about 22.5 mg/mL, about 25 mg/mL, about 27.5 mg/ml, about 30 mg/mL, about 32.5 mg/mL, about 35 mg/mL, about 37.5 mg/mL, about 40 mg/mL, about 42.5 mg/mL, about 45 mg/mL, about 47.5 mg/mL, about 50 mg/mL, about 55 mg/mL, about 60 mg/mL, about 65 mg/mL, about 70 mg/mL, about 75 mg/mL, about 80 mg/mL, about 85 mg/mL, about 90 mg/mL, about 95 mg/mL, about 100 mg/mL, about 105 mg/mL, about 110 mg/mL, about 115 mg/mL, about 120 mg/mL, about 125 mg/mL, 130 mg/mL, about 135 mg/mL, about 140 mg/mL, about 145 mg/mL, about 150 mg/mL, about 155 mg/mL, about 160 mg/mL, about 165 mg/mL, about 170 mg/mL, about 175 mg/mL, about 180 mg/mL, about 185 mg/mL, about 190 mg/mL, about 195 mg/mL, about 200 mg/mL, about 10 mg, about 40 mg, about 100 mg, about 200 mg, about 240 mg, about 300 mg, about 350 mg, about 360 mg, about 400 mg, or about 480 mg of an anti-PD-1 antibody.

**[0555]** In some aspects, the kit comprises about 12.5 mg/mL of an anti-LAG-3 antibody and about 37.5 mg/mL of an anti-PD-1 antibody.

**[0556]** In some aspects, the kit comprises about 20 mg/mL of an anti-LAG-3 antibody and about 5 mg/mL of an anti-PD-1 antibody.

**[0557]** In some aspects, the kit comprises about 75 mg/mL of an anti-LAG-3 antibody and about 75 mg/mL of an anti-PD-1 antibody.

**[0558]** In some aspects, the kit comprises about 100 mg/mL of an anti-LAG-3 antibody and about 50 mg/mL of an anti-PD-1 antibody.

**[0559]** In some aspects, the kit comprises about 80 mg of an anti-LAG-3 antibody and about 240 mg of an anti-PD-1 antibody.

[0560] In some aspects, the kit comprises about 80 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody.

[0561] In some aspects, the kit comprises about 160 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody.

[0562] In some aspects, the kit comprises about 360 mg of an anti-LAG-3 antibody and about 360 mg of an anti-PD-1 antibody.

[0563] In some aspects, the kit comprises about 480 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody.

[0564] In some aspects, the kit comprises about 720 mg of an anti-LAG-3 antibody and about 360 mg of an anti-PD-1 antibody.

[0565] In some aspects, the kit comprises about 800 mg of an anti-LAG-3 antibody and about 200 mg of an anti-PD-1 antibody.

[0566] In some aspects, the kit comprises about 960 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody.

[0567] In some aspects, the anti-LAG-3 and anti-PD-1 antibodies are co-packaged in a single unit dosage form.

[0568] In some aspects, the anti-LAG-3 and anti-PD-1 antibodies are packaged as separate unit dosage forms.

[0569] In some aspects, about 40 mg of the anti-LAG-3 antibody is provided in a unit dosage form.

[0570] In some aspects, about 80 mg of the anti-LAG-3 antibody is provided in a unit dosage form.

[0571] In some aspects, about 160 mg of the anti-LAG-3 antibody is provided in a unit dosage form.

[0572] In some aspects, about 360 mg of the anti-LAG-3 antibody is provided in a unit dosage form.

[0573] In some aspects, about 480 mg of the anti-LAG-3 antibody is provided in a unit dosage form.

[0574] In some aspects, about 720 mg of the anti-LAG-3 antibody is provided in a unit dosage form.

[0575] In some aspects, about 800 mg of the anti-LAG-3 antibody is provided in a unit dosage form.

[0576] In some aspects, about 960 mg of the anti-LAG-3 antibody is provided in a unit dosage form.

[0577] In some aspects, about 12.5 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0578] In some aspects, about 20 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0579] In some aspects, about 50 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0580] In some aspects, about 75 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0581] In some aspects, about 100 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0582] In some aspects, about 130 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0583] In some aspects, about 150 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0584] In some aspects, about 175 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0585] In some aspects, about 200 mg/mL of the anti-LAG-3 antibody is provided in a unit dosage form.

[0586] In some aspects, about 10 mg of the anti-PD-1 antibody is provided in a unit dosage form.

[0587] In some aspects, about 40 mg of the anti-PD-1 antibody is provided in a unit dosage form.

[0588] In some aspects, about 100 mg of the anti-PD-1 antibody is provided in a unit dosage form.

[0589] In some aspects, about 200 mg of the anti-PD-1 antibody is provided in a unit dosage form.

[0590] In some aspects, about 240 mg of the anti-PD-1 antibody is provided in a unit dosage form.

[0591] In some aspects, about 360 mg of the anti-PD-1 antibody is provided in a unit dosage form.

**[0592]** In some aspects, about 480 mg of the anti-PD-1 antibody is provided in a unit dosage form.

**[0593]** In some aspects, about 5 mg/mL of the anti-PD-1 antibody is provided in a unit dosage form.

**[0594]** In some aspects, about 10 mg/mL of the anti-PD-1 antibody is provided in a unit dosage form.

**[0595]** In some aspects, about 37.5 mg/mL of the anti-PD-1 antibody is provided in a unit dosage form.

**[0596]** In some aspects, about 50 mg/mL of the anti-PD-1 antibody is provided in a unit dosage form.

**[0597]** In some aspects, about 75 mg/mL of the anti-PD-1 antibody is provided in a unit dosage form.

**[0598]** In some aspects, about 100 mg/mL of the anti-PD-1 antibody is provided in a unit dosage form.

**[0599]** In some aspects, about 175 mg/mL of the anti-PD-1 antibody is provided in a unit dosage form.

**[0600]** In some aspects, about 200 mg/mL of the anti-PD-1 antibody is provided in a unit dosage form.

**[0601]** In some aspects, the unit dosage form comprises from about 5 mM to about 50 mM of histidine, from about 50 mM to about 300 mM of sucrose, from about 5 μM to about 1 mM of diethylenetriaminepentaacetic acid (DTPA) or ethylenediaminetetraacetic acid (EDTA), and from about 0.001% to about 1% (w/v) of polysorbate or poloxamer (*e.g.*, polysorbate 80 (PS80), polysorbate 20 (PS20), poloxamer 188 (PX188), or any combination thereof).

**[0602]** In some aspects, the unit dosage form comprises about 20 mM histidine, about 250 mM sucrose, about 50 μM DTPA, and 0.05% PS80.

**[0603]** In some aspects, the unit dosage form comprises a pH of from about 5 to about 6.5. In some aspects, the pH is about 5.3 to about 6.3. In some aspects, the pH is 5.8. In some aspects, the pH is 5.7.

**[0604]** In some aspects, the unit dosage form is a vial, syringe, or intravenous bag. In some aspects, the unit dosage form is an autoinjector. In some aspects, the unit dosage form is a vial comprising a stopper and a seal. In some aspects, the total volume in the vial is about

5 mL, about 6 mL, about 7 mL, about 8 mL, about 9 mL, about 10 mL, about 11 mL, about 12 mL, about 13 mL, about 14 mL, about 15 mL, about 16 mL, about 17 mL, about 18 mL, about 19 mL, or about 20 mL.

**[0605]** In some aspects, the kit provides instructions for administering the anti-LAG-3 antibody and/or the anti-PD-1 antibody intravenously for about 30 minutes.

**[0606]** All of the references cited above, as well as all references cited herein, are incorporated herein by reference in their entireties.

**[0607]** The following examples are offered by way of illustration and not by way of limitation.

## EXAMPLES

### EXAMPLE 1

Anti-LAG-3 and Anti-PD-1 Antibody Combination for Treating Hematological Cancer

**[0608]** An open-label clinical study will evaluate the safety and tolerability of the combination of relatlimab and nivolumab in participants with recurrent or refractory (R/R) classical Hodgkin lymphoma (cHL) or R/R non-Hodgkin lymphoma (NHL). The study will be carried out in two parts. Part A will characterize the safety, tolerability, and pharmacokinetics for relatlimab plus nivolumab in pediatric participants less than 18 years old with R/R cHL or R/R NHL, and define the maximum tolerated dose (MTD) or recommended Phase 2 dose (RP2D). Part A will include a flat dosing cohort (AF) for participants $\geq$ 12 years old and weighing $\geq$ 40 kg and a weight-based dosing cohort (AW) for participants < 12 years old and/or weighing < 40 kg. Part B will include an expansion cohort to assess the preliminary efficacy of relatlimab plus nivolumab based on the RP2D from Part A in participants less than or equal to 30 years old with R/R cHL (Cohort 1) and an exploratory cohort that will assess efficacy of relatlimab plus nivolumab in participants with R/R NHL (Cohort 2).

**Participant Inclusion/Exclusion Criteria**

**[0609]** The study will include male and female participants less than 18 years of age (Part A) and less than or equal to 30 years of age (Part B) with pathologically confirmed high-risk R/R cHL or high-risk R/R NHL after failure or non-response to first-line therapy and prior to high-dose chemotherapy (HDCT)/autologous stem cell transplantation (ASCT).

**[0610]** Permitted Stages of cHL include IIB with bulky disease, IIIA with E-lesions with or without bulky disease, IIIB and IV, where E-lesions are defined as localized involvement of extralymphatic tissue (by contiguous growth from, or in close anatomic relation to, an involved lymph node) that is treatable by irradiation. High-risk in cHL for this study is defined by the following characteristics: early relapse, extranodal disease or B symptoms at relapse, extensive disease where radiation therapy was contraindicated at relapse, and/ or relapse in a prior radiation field.

**[0611]** Permitted Stages of NHL include Stage III or Stage IV per the Lugano 2014 Classification. NHL includes, but is not limited to, diffuse large B-cell lymphoma (DLBCL), anaplastic large cell lymphoma (ALCL), and primary mediastinal B-cell lymphoma. High-risk in NHL for this study is defined by a score of $\geq 2$ from the second-line therapy age-adjusted International Prognostic Index (sAAIPI) scale, which assigns a score of 1 point each for a Karnofsky Performance Status < 80%, elevated serum lactate dehydrogenase, and Stage III/IV disease.

**[0612]** For both cHL and NHL, recurrent (or relapsed) disease is defined as achieving a complete response (CR) to previous therapy but then progressing three months or more after completion of that therapy, while refractory disease is defined as never achieving a CR to previous therapy or achieving a CR but then progressing within three months of completion of that therapy.

**[0613]** Participants will have measurable or evaluable disease based on the Lugano 2014 Classification criteria, and [18F]fluorodeoxyglucose-positron emission tomography (FDG-PET)-avid and bidimensional measurable disease of at least 1.5 cm in longest axis as documented by radiographic technique (*e.g.*, contrast-enhanced computed tomography (CT)).

**[0614]** The Lansky play-performance scale and Karnofsky performance scores for participants $\leq$ 16 years old > 16 years old, respectively, will be assessed within 2 weeks of enrollment and must be $\geq 60$. Participants who are unable to walk because of neurologic deficits but who are in a wheelchair will be considered ambulatory for the purpose of assessing the performance score.

**[0615]** Participants must have achieved a substantial recovery (*i.e.*, $\leq$ Grade 1 or no ongoing safety issues) from prior therapy.

[0616] A formalin-fixed paraffin-embedded tissue block or a minimum of 20 unstained slides of tumor tissue from core biopsy, punch biopsy, excisional biopsy, or surgical specimen obtained during screening or prior to treatment assignment within 3 months of enrollment with no intervening systemic anti-cancer treatment between time of acquisition and enrollment).

[0617] Key exclusion criteria will be: (1) prior treatment with an anti-CTLA-4 antibody, or any other antibody or drug specifically targeting T-cell co-stimulation or checkpoint pathways, with the exception of anti-PD-1 or anti-PD-L1 targeted therapies; (2) prior treatment with LAG-3-targeted agents; (3) participants with prior HDCT/ASCT; (4) participants with a history of allogeneic bone marrow transplantation and with active graft versus host disease (GVHD) and prior history of Grade > 2 GVHD; (5) participants with clinically significant systemic illnesses unrelated to the cancer as judged by the investigators, which would compromise the participant's ability to tolerate the study treatment; and (6) participants with autoimmune disease.

**Part A**

[0618] Pediatric participants less than 18 years of age with R/R cHL or R/R NHL will be recruited and separated into flat-dosing (AF) or weight-based dosing (AW) cohorts.

[0619] **AF Cohort**: Up to 6 participants aged ≥ 12 to < 18 years and weighing at least 40 kg will be given a flat dose of 160 mg relatlimab (BMS-986016) and 480 mg nivolumab (BMS-936558) intravenously (IV) every 4 weeks (Q4W) (*i.e.*, A1F). If the starting dose is found to be not tolerated, then the relatlimab dose will be decreased to 80 mg in combination with 480 mg nivolumab IV Q4W (*i.e.*, A2F).

[0620] **AW Cohort**: Up to 6 participants less than 12 years of age and/or weighing less than 40 kg will be given a weight-based dose of 2 mg/kg relatlimab up to a maximum of 160 mg, and 6 mg/kg nivolumab up to a maximum of 480 mg IV Q4W (*i.e.*, A1W). If the starting dose is found to be not tolerated, then the relatlimab dose will be decreased to 1 mg/kg in combination with 6 mg/kg nivolumab IV Q4W (*i.e.*, A2W).

[0621] Relatlimab will be mixed with nivolumab in the same infusion bag and co-administered intravenously over approximately 30 minutes at the specified doses in each cohort.

[0622] Enrollment in the two dosing cohorts (A1F and A1W) will be initiated in parallel. Assessments for safety and pharmacokinetics in the two dosing cohorts will run concurrently and independently of each other.

[0623] For the purpose of guiding decisions regarding any decreases in dose, dose-limiting toxicities (DLTs) will be defined based on the incidence, intensity, and duration of adverse events (AEs) for which no clear alternative cause is identified. The DLT period will start on Cycle 1 Day 1 and end at Day 28 (4-week period). The severity of AEs will be graded according to National Cancer Institute (NCI) CTCAE v5.0.

[0624] Since the dosing cohorts are independent, they will be evaluated for DLTs separately. If dosing in one cohort must be reduced or stopped due to DLTs, the other cohort will continue as outlined. If DLT is observed in 2 or more participants in a cohort, the dose will be decreased as noted above for that cohort, and an additional 6 participants will be evaluated for toxicity and exposure, for another $\geq$ 2 DLTs.

[0625] If the A1F and A2F dose levels are not tolerated, accrual into the AF cohort will be terminated. Additional participants aged 12 and above and at least 40 kg will be enrolled onto A2W in the weight-based dosing cohort, and if found to be tolerated, A2W will be declared as the RP2D for these participants. The participants aged < 12 years and/or weighing < 40 kg would continue to be enrolled and evaluated in parallel.

[0626] If no DLTs are observed, a minimum of 6 participants will be enrolled in A1F and A1W, respectively.

**Part B**

[0627] Part B of the study will evaluate efficacy of relatlimab and nivolumab at its RP2D/MTD from Part A in pediatric participants with high-risk R/R cHL (Cohort 1) and in a cohort of high-risk R/R NHL (Cohort 2). Participants in Part A will be counted towards the accrual goals of Part B if they are treated at the same dose selected for Part B.

[0628] Male and female participants with R/R cHL (Cohort 1) or NHL (Cohort 2) less than or equal to 30 years of age will be recruited.

[0629] Approximately 40 response-evaluable cHL participants will be enrolled in Cohort 1. Preliminary efficacy in cHL will be evaluated using the estimated complete metabolic response (CMR) rate and exact 2-sided 90% confidence interval (CI) in the 40 response-evaluable participants. Retrospective analysis of response by LAG-3 expression will also be performed to evaluate correlation between LAG-3 expression and CMR.

**[0630]** The exploratory efficacy assessment of NHL in Cohort 2 using CMR rate will be based on a modified Simon 2-stage design. Ten response-evaluable participants will be enrolled in Stage 1. If less than 2/10 responses are observed in Stage 1, further enrollment into Cohort 2 will be closed. If at least 2 responses are observed in Stage 1, retrospective analysis of LAG-3 expression and its correlation with clinical response among the first 10 response-evaluable participants will inform further accrual of additional NHL participants into Stage 2.

**[0631]** Participants in any tolerated dosing schemas in Part A and any additional participants in Part B will be treated until PMD, death, unacceptable toxicity, symptomatic deterioration, the investigator's decision to discontinue treatment (*e.g.*, due to CMR enabling participants to proceed to HDCT/ASCT), the participant's decision to discontinue treatment or withdraw consent, the participant is lost to follow-up, conclusion of the study, or for a maximum of 2 years of treatment, whichever occurs first.

**[0632]** For efficacy assessment in Parts A and B, imaging and response criteria will be based on the International Lymphoma Working Group's revised recommendations for malignant lymphoma. Primary response assessment will be evaluated using Lugano 2014 Classification. Overall response rate (ORR) outcomes will be summarized using frequency tables together with 95% CIs. Time to event distribution (*e.g.*, progression-free survival (PFS), duration of response (DOR), and duration of CMR [DoCMR]) and rates at fixed time points (*e.g.*, PFS rate at 12 months) will be estimated using or derived from the Kaplan-Meier (K-M) method, as appropriate. Overall survival (OS) data will be analyzed similarly to PFS data analysis.

# SEQUENCES

SEQ ID NO:1 Heavy Chain Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

QVQLQQWGAGLLKPSETLSLTCAVYGGSFSDYYWNWIRQPPGKGLEWIGEINHRGSTNSNPSLKS
RVTLSLDTSKNQFSLKLRSVTAADTAVYYCAFGYSDYEYNWFDPWGQGTLVTVSSASTKGPSVFP
LAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSS
LGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVT
CVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSN
KGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENN
YKTTPPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLSLGK

SEQ ID NO:2 Light Chain Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

EIVLTQSPATLSLSPGERATLSCRASQSISSYLAWYQQKPGQAPRLLIYDASNRATGIPARFSGS
GSGTDFTLTISSLEPEDFAVYYCQQRSNWPLTFGQGTNLEIKRTVAAPSVFIFPPSDEQLKSGTA
SVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACE
VTHQGLSSPVTKSFNRGEC

SEQ ID NO:3 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

QVQLQQWGAGLLKPSETLSLTCAVYGGSFSDYYWNWIRQPPGKGLEWIGEINHRGSTNSNPSLKS
RVTLSLDTSKNQFSLKLRSVTAADTAVYYCAFGYSDYEYNWFDPWGQGTLVTVSS

SEQ ID NO:4 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

EIVLTQSPATLSLSPGERATLSCRASQSISSYLAWYQQKPGQAPRLLIYDASNRATGIPARFSGS
GSGTDFTLTISSLEPEDFAVYYCQQRSNWPLTFGQGTNLEIK

SEQ ID NO:5 Heavy Chain CDR1 Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

DYYWN

SEQ ID NO:6 Heavy Chain CDR2 Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

EINHRGSTNSNPSLKS

SEQ ID NO:7 Heavy Chain CDR3 Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

GYSDYEYNWFDP

SEQ ID NO:8 Light Chain CDR1 Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

RASQSISSYLA

SEQ ID NO:9 Light Chain CDR2 Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

DASNRAT

SEQ ID NO:10 Light Chain CDR3 Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016)

QQRSNWPLT

SEQ ID NO:11 Heavy Chain Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

QVQLVESGGGVVQPGRSLRLDCKASGITFSNSGMHWVRQAPGKGLEWVAVIWYDGSKRYYADSVK
GRFTISRDNSKNTLFLQMNSLRAEDTAVYYCATNDDYWGQGTLVTVSSASTKGPSVFPLAPCSRS
TSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTKTYT
CNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVS
QEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSI

EKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPV
LDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLSLGK

SEQ ID NO:12 Light Chain Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

EIVLTQSPATLSLSPGERATLSCRASQSVSSYLAWYQQKPGQAPRLLIYDASNRATGIPARFSGS
GSGTDFTLTISSLEPEDFAVYYCQQSSNWPRTFGQGTKVEIKRTVAAPSVFIFPPSDEQLKSGTA
SVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLLSKADYEKHKVYACEV
THQGLSSPVTKSFNRGEC

SEQ ID NO:13 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

QVQLVESGGGVVQPGRSLRLDCKASGITFSNSGMHWVRQAPGKGLEWVAVIWYDGSKRYYADSVK
GRFTISRDNSKNTLFLQMNSLRAEDTAVYYCATNDDYWGQGTLVTVSS

SEQ ID NO:14 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

EIVLTQSPATLSLSPGERATLSCRASQSVSSYLAWYQQKPGQAPRLLIYDASNRATGIPARFSGS
GSGTDFTLTISSLEPEDFAVYYCQQSSNWPRTFGQGTKVEIK

SEQ ID NO:15 Heavy Chain CDR1 Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

NSGMH

SEQ ID NO:16 Heavy Chain CDR2 Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

VIWYDGSKRYYADSVKG

SEQ ID NO:17 Heavy Chain CDR3 Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

NDDY

SEQ ID NO:18 Light Chain CDR1 Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

RASQSVSSYLA

SEQ ID NO:19 Light Chain CDR2 Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

DASNRAT

SEQ ID NO:20 Light Chain CDR3 Amino Acid Sequence; Anti-PD-1 mAb (BMS-936558)

QQSSNWPRT

SEQ ID NO:21 Heavy Chain Amino Acid Sequence; Anti-LAG-3 mAb (BMS-986016) without terminal lysine

QVQLQQWGAGLLKPSETLSLTCAVYGGSFSDYYWNWIRQPPGKGLEWIGEINHRGSTNSNPSLKS
RVTLSLDTSKNQFSLKLRSVTAADTAVYYCAFGYSDYEYNWFDPWGQGTLVTVSSASTKGPSVFP

LAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSS
LGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLFPPKPKDTLMISRTPEVT
CVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSN
KGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENN
YKTTPPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMHEALHNHYTQKSLSLSLG

SEQ ID NO:22 Lymphocyte Activation Gene 3 Protein Amino Acid Sequence (Homo Sapiens, NP_002277)

MWEAQFLGLLFLQPLWVAPVKPLQPGAEVPVVWAQEGAPAQLPCSPTIPLQDLSLLRRAGVTWQH
QPDSGPPAAAPGHPLAPGPHPAAPSSWGPRPRRYTVLSVGPGGLRSGRLPLQPRVQLDERGRQRG
DFSLWLRPARRADAGEYRAAVHLRDRALSCRLRLRLGQASMTASPPGSLRASDWVILNCSFSRPD
RPASVHWFRNRGQGRVPVRESPHHHLAESFLFLPQVSPMDSGPWGCILTYRDGFNVSIMYNLTVL
GLEPPTPLTVYAGAGSRVGLPCRLPAGVGTRSFLTAKWTPPGGGPDLLVTGDNGDFTLRLEDVSQ
AQAGTYTCHIHLQEQQLNATVTLAIITVTPKSFGSPGSLGKLLCEVTPVSGQERFVWSSLDTPSQ
RSFSGPWLEAQEAQLLSQPWQCQLYQGERLLGAAVYFTELSSPGAQRSGRAPGALPAGHLLLFLI
LGVLSLLLLVTGAFGFHLWRRQWRPRRFSALEQGIHPPQAQSKIEELEQEPEPEPEPEPEPEPEP
EPEQL

SEQ ID NO:23 Heavy Chain Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

QVQLVESGGGVVQPGRSLRLSCVASGFTFSSYGMHWVRQAPGKGLEWVAIIWYDGSNKYY
ADSVKGRFTISRDNSKNTQYLQMNSLRAEDTAVYYCASVATSGDFDYYGMDVWGQGTTVT
VSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVL
QSSGLYSLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPPVAGP
SVFLFPPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNS
TYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEM
TKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSRLTVDKSRWQ
EGNVFSCSVMHEALHNHYTQKSLSLSLGK

SEQ ID NO:24 Light Chain Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

EIVLTQSPATLSLSPGERTTLSCRASQRISTYLAWYQQKPGQAPRLLIYDASKRATGIPA
RFSGSGSGTGFTLTISSLEPEDFAVYYCQQRSNWPLTFGGGTKVEIKRTVAAPSVFIFPP
SDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLT
LSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

SEQ ID NO:25 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

QVQLVESGGGVVQPGRSLRLSCVASGFTFSSYGMHWVRQAPGKGLEWVAIIWYDGSNKYY
ADSVKGRFTISRDNSKNTQYLQMNSLRAEDTAVYYCASVATSGDFDYYGMDVWGQGTTVT
VSS

SEQ ID NO:26 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

EIVLTQSPATLSLSPGERTTLSCRASQRISTYLAWYQQKPGQAPRLLIYDASKRATGIPA
RFSGSGSGTGFTLTISSLEPEDFAVYYCQQRSNWPLTFGGGTKVEIK

SEQ ID NO:27 Heavy Chain CDR1 Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

GFTFSSYG

SEQ ID NO:28 Heavy Chain CDR2 Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

IWYDGSNK

SEQ ID NO:29 Heavy Chain CDR3 Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

ASVATSGDFDYYGMDV

SEQ ID NO:30 Light Chain CDR1 Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

QRISTY

SEQ ID NO:31 Light Chain CDR2 Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

DAS

SEQ ID NO:32 Light Chain CDR3 Amino Acid Sequence; Anti-LAG-3 mAb (REGN3767)

QQRSNWPLT

SEQ ID NO:33 Heavy Chain Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

EVQLLESGGVLVQPGGSLRLSCAASGFTFSNFGMTWVRQAPGKGLEWVSGISGGGRDTYF
ADSVKGRFTISRDNSKNTLYLQMNSLKGEDTAVYYCVKWGNIYFDYWGQGTLVTVSSAST
KGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLY
SLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLF
PPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVV
SVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQV
SLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSRLTVDKSRWQEGNVF
SCSVMHEALHNHYTQKSLSLSLGK

SEQ ID NO:34 Light Chain Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

DIQMTQSPSSLSASVGDSITITCRASLSINTFLNWYQQKPGKAPNLLIYAASSLHGGVPS
RFSGSGSGTDFTLTIRTLQPEDFATYYCQQSSNTPFTFGPGTVVDFRRTVAAPSVFIFPP
SDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLT
LSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

SEQ ID NO:35 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

EVQLLESGGVLVQPGGSLRLSCAASGFTFSNFGMTWVRQAPGKGLEWVSGISGGGRDTYF
ADSVKGRFTISRDNSKNTLYLQMNSLKGEDTAVYYCVKWGNIYFDYWGQGTLVTVSS

SEQ ID NO:36 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

DIQMTQSPSSLSASVGDSITITCRASLSINTFLNWYQQKPGKAPNLLIYAASSLHGGVPS
RFSGSGSGTDFTLTIRTLQPEDFATYYCQQSSNTPFTFGPGTVVDFR

SEQ ID NO:37 Heavy Chain CDR1 Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

GFTFSNFG

SEQ ID NO:38 Heavy Chain CDR2 Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

ISGGGRDT

SEQ ID NO:39 Heavy Chain CDR3 Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

VKWGNIYFDY

SEQ ID NO:40 Light Chain CDR1 Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

LSINTF

SEQ ID NO:41 Light Chain CDR2 Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

AAS

SEQ ID NO:42 Light Chain CDR3 Amino Acid Sequence; Anti-PD-1 mAb (REGN2810)

QQSSNTPFT

SEQ ID NO:43 Heavy Chain Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

QVQLVQSGAEVKKPGASVKVSCKASGFTLTNYGMNWVRQARGQRLEWIGWINTDTGEPTY
ADDFKGRFVFSLDTSVSTAYLQISSLKAEDTAVYYCARNPPYYYGTNNAEAMDYWGQGTT
VTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPA
VLQSSGLYSLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFL
GGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQ
FNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQ
EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSRLTVDKS
RWQEGNVFSCSVMHEALHNHYTQKSLSLSLG

SEQ ID NO:44 Heavy Chain Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

QVQLVQSGAEVKKPGASVKVSCKASGFTLTNYGMNWVRQAPGQGLEWMGWINTDTGEPTY
ADDFKGRFVFSLDTSVSTAYLQISSLKAEDTAVYYCARNPPYYYGTNNAEAMDYWGQGTT
VTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPA
VLQSSGLYSLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFL
GGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQ
FNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQ
EEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSRLTVDKS
RWQEGNVFSCSVMHEALHNHYTQKSLSLSLG

SEQ ID NO:45 Light Chain Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

DIQMTQSPSSLSASVGDRVTITCSSSQDISNYLNWYLQKPGQSPQLLIYYTSTLHLGVPS
RFSGSGSGTEFTLTISSLQPDDFATYYCQQYYNLPWTFGQGTKVEIKRTVAAPSVFIFPP
SDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLT
LSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

SEQ ID NO:46 Light Chain Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

DIQMTQSPSSLSASVGDRVTITCSSSQDISNYLNWYQQKPGKAPKLLIYYTSTLHLGIPP
RFSGSGYGTDFTLTINNIESEDAAYYFCQQYYNLPWTFGQGTKVEIKRTVAAPSVFIFPP
SDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLT
LSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

SEQ ID NO:47 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

QVQLVQSGAEVKKPGASVKVSCKASGFTLTNYGMNWVRQARGQRLEWIGWINTDTGEPTY
ADDFKGRFVFSLDTSVSTAYLQISSLKAEDTAVYYCARNPPYYYGTNNAEAMDYWGQGTT
VTVSS

SEQ ID NO:48 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

QVQLVQSGAEVKKPGASVKVSCKASGFTLTNYGMNWVRQAPGQGLEWMGWINTDTGEPTY
ADDFKGRFVFSLDTSVSTAYLQISSLKAEDTAVYYCARNPPYYYGTNNAEAMDYWGQGTT
VTVSS

SEQ ID NO:49 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

DIQMTQSPSSLSASVGDRVTITCSSSQDISNYLNWYLQKPGQSPQLLIYYTSTLHLGVPS
RFSGSGSGTEFTLTISSLQPDDFATYYCQQYYNLPWTFGQGTKVEIK

SEQ ID NO:50 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

DIQMTQSPSSLSASVGDRVTITCSSSQDISNYLNWYQQKPGKAPKLLIYYTSTLHLGIPP
RFSGSGYGTDFTLTINNIESEDAAYYFCQQYYNLPWTFGQGTKVEIK

SEQ ID NO:51 Heavy Chain CDR1 Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

NYGMN

SEQ ID NO:52 Heavy Chain CDR2 Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

WINTDTGEPTYADDFKG

SEQ ID NO:53 Heavy Chain CDR3 Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

NPPYYYGTNNAEAMDY

SEQ ID NO:54 Light Chain CDR1 Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

SSSQDISNYLN

SEQ ID NO:55 Light Chain CDR2 Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

YTSTLHL

SEQ ID NO:56 Light Chain CDR3 Amino Acid Sequence; Anti-LAG-3 mAb (LAG525)

QQYYNLPWT

SEQ ID NO:57 Heavy Chain Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

EVQLVQSGAEVKKPGESLRISCKGSGYTFTTYWMHWVRQATGQGLEWMGNIYPGTGGSNF
DEKFKNRVTITADKSTSTAYMELSSLRSEDTAVYYCTRWTTGTGAYWGQGTTVTVSSAST
KGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLY
SLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVFLF
PPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVV
SVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKNQV
SLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSRLTVDKSRWQEGNVF
SCSVMHEALHNHYTQKSLSLSLG

SEQ ID NO:58 Light Chain Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

EIVLTQSPATLSLSPGERATLSCKSSQSLLDSGNQKNFLTWYQQKPGQAPRLLIYWASTR
ESGVPSRFSGSGSGTDFTFTISSLEAEDAATYYCQNDYSYPYTFGQGTKVEIKRTVAAPS
VFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYS
LSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

SEQ ID NO:59 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

EVQLVQSGAEVKKPGESLRISCKGSGYTFTTYWMHWVRQATGQGLEWMGNIYPGTGGSNF
DEKFKNRVTITADKSTSTAYMELSSLRSEDTAVYYCTRWTTGTGAYWGQGTTVTVSS

SEQ ID NO:60 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

EIVLTQSPATLSLSPGERATLSCKSSQSLLDSGNQKNFLTWYQQKPGQAPRLLIYWASTR
ESGVPSRFSGSGSGTDFTFTISSLEAEDAATYYCQNDYSYPYTFGQGTKVEIK

SEQ ID NO:61 Heavy Chain CDR1 Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

TYWMH

SEQ ID NO:62 Heavy Chain CDR2 Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

NIYPGTGGSNFDEKFKN

SEQ ID NO:63 Heavy Chain CDR3 Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

WTTGTGAY

SEQ ID NO:64 Light Chain CDR1 Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

KSSQSLLDSGNQKNFLT

SEQ ID NO:65 Light Chain CDR2 Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

WASTRES

SEQ ID NO:66 Light Chain CDR3 Amino Acid Sequence; Anti-PD-1 mAb (PDR001)

QNDYSYPYT

SEQ ID NO:67 Heavy Chain Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

QMQLVQSGPEVKKPGTSVKVSCKASGYTFTDYNVDWVRQARGQRLEWIGDINPNDGGTIY
AQKFQERVTITVDKSTSTAYMELSSLRSEDTAVYYCARNYRWFGAMDHWGQGTTVTVSSA
STKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSG
LYSLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSVF
LFPPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYR
VVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTKN
QVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSRLTVDKSRWQEGN
VFSCSVMHEALHNHYTQKSLSLSLGK

SEQ ID NO:68 Light Chain Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

DIVMTQTPLSLSVTPGQPASISCKASQSLDYEGDSDMNWYLQKPGQPPQLLIYGASNLES
GVPDRFSGSGSGTDFTLKISRVEAEDVGVYYCQQSTEDPRTFGGGTKVEIKRTVAAPSVF
IFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLS
STLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

SEQ ID NO:69 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

QMQLVQSGPEVKKPGTSVKVSCKASGYTFTDYNVDWVRQARGQRLEWIGDINPNDGGTIY
AQKFQERVTITVDKSTSTAYMELSSLRSEDTAVYYCARNYRWFGAMDHWGQGTTVTVSS

SEQ ID NO:70 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-LAG-3 Anti-LAG-3 mAb (MK4280)

DIVMTQTPLSLSVTPGQPASISCKASQSLDYEGDSDMNWYLQKPGQPPQLLIYGASNLES
GVPDRFSGSGSGTDFTLKISRVEAEDVGVYYCQQSTEDPRTFGGGTKVEIK

SEQ ID NO:71 Heavy Chain CDR1 Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

DYNVD

SEQ ID NO:72 Heavy Chain CDR2 Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

DINPNDGGTIYAQKFQE

SEQ ID NO:73 Heavy Chain CDR3 Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

NYRWFGAMDH

SEQ ID NO:74 Light Chain CDR1 Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

KASQSLDYEGDSDMN

SEQ ID NO:75 Light Chain CDR2 Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

GASNLES

SEQ ID NO:76 Light Chain CDR3 Amino Acid Sequence; Anti-LAG-3 mAb (MK4280)

QQSTEDPRT

SEQ ID NO:77 Heavy Chain Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

QVQLVQSGVEVKKPGASVKVSCKASGYTFTNYYMYWVRQAPGQGLEWMGGINPSNGGTNF
NEKFKNRVTLTTDSSTTTAYMELKSLQFDDTAVYYCARRDYRFDMGFDYWGQGTTVTVSS
ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSS
GLYSLSSVVTVPSSSLGTKTYTCNVDHKPSNTKVDKRVESKYGPPCPPCPAPEFLGGPSV
FLFPPKPKDTLMISRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTY
RVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTISKAKGQPREPQVYTLPPSQEEMTK
NQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSRLTVDKSRWQEG
NVFSCSVMHEALHNHYTQKSLSLSLGK

SEQ ID NO:78 Light Chain Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

EIVLTQSPATLSLSPGERATLSCRASKGVSTSGYSYLHWYQQKPGQAPRLLIYLASYLES
GVPARFSGSGSGTDFTLTISSLEPEDFAVYYCQHSRDLPLTFGGGTKVEIKRTVAAPSVF
IFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLS
STLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

SEQ ID NO:79 Heavy Chain Variable Region (VH) Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

QVQLVQSGVEVKKPGASVKVSCKASGYTFTNYYMYWVRQAPGQGLEWMGGINPSNGGTNF
NEKFKNRVTLTTDSSTTTAYMELKSLQFDDTAVYYCARRDYRFDMGFDYWGQGTTVTVSS

SEQ ID NO:80 Light Chain Variable Region (VL) Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

EIVLTQSPATLSLSPGERATLSCRASKGVSTSGYSYLHWYQQKPGQAPRLLIYLASYLES
GVPARFSGSGSGTDFTLTISSLEPEDFAVYYCQHSRDLPLTFGGGTKVEIK

SEQ ID NO:81 Heavy Chain CDR1 Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

NYYMY

SEQ ID NO:82 Heavy Chain CDR2 Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

GINPSNGGTNFNEKFKN

SEQ ID NO:83 Heavy Chain CDR3 Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

RDYRFDMGFDY

SEQ ID NO:84 Light Chain CDR1 Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

RASKGVSTSGYSYLH

SEQ ID NO:85 Light Chain CDR2 Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

LASYLES

SEQ ID NO:86 Light Chain CDR3 Amino Acid Sequence; Anti-PD-1 mAb (MK3475)

QHSRDLPLT

WHAT IS CLAIMED IS:

1. A method of treating a human subject afflicted with a hematological cancer, the method comprising administering to the subject a lymphocyte activation gene-3 (LAG-3) antagonist, wherein the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

2. A method of treating a human subject afflicted with a hematological cancer, the method comprising administering to the subject a LAG-3 antagonist, wherein the subject has a weight of less than about 40 kg.

3. The method of claim 1 or 2, wherein the subject is less than about 30 years old.

4. The method of any one of claims 1-3, wherein the subject is less than about 18 years old.

5. The method of any one of claims 1-4, wherein the subject is greater than about 16 years old and has a Karnofsky performance score of greater than or equal to 60.

6. A method of treating a human subject afflicted with a hematological cancer, the method comprising administering to the subject a LAG-3 antagonist, wherein the subject is less than about 12 years old.

7. The method of any one of claims 1-4, wherein the subject is less than or equal to about 16 years old.

8. The method of claim 6 or 7, wherein the subject has a Lansky play-performance score of greater than or equal to 60.

9. The method of any one of claims 1-8, wherein the method is a first line therapy.

10. The method of any one of claims 1-8, wherein the method is a second line therapy.

11. The method of any one of claims 1-8, wherein the method is a third line therapy.

12. The method of claim 10 or 11, wherein the subject has progressed on a prior therapy.

13. The method of any one of claims 1-12, wherein the subject is naïve to prior immuno-oncology therapy, the subject is naïve to prior immuno-oncology therapy for hematological cancer, or the hematological cancer is naïve to prior immuno-oncology therapy.

14. The method of any one of claims 1-13, wherein the LAG-3 antagonist is administered prior to high-dose chemotherapy, autologous stem cell transplantation, or a combination thereof.

15. The method of any one of claims 1-14, wherein the subject is naïve to prior high-dose chemotherapy, autologous stem cell transplantation, or a combination thereof.

16. The method of any one of claims 1-15, wherein the hematological cancer is recurrent or refractory.

17. The method of any one of claims 1-16, wherein the hematological cancer is metastatic.

18. The method of any one of claims 1-17, wherein the hematological cancer comprises a leukemia, lymphoma, or myeloma.

19. The method of claim 1-18, wherein the hematological cancer comprises a Hodgkin lymphoma.

20. The method of claim 19, wherein the Hodgkin lymphoma comprises nodular lymphocyte-predominant Hodgkin lymphoma.

21. The method of claim 19, wherein the Hodgkin lymphoma comprises a classical Hodgkin lymphoma.

22. The method of claim 21, wherein the classical Hodgkin lymphoma is a recurrent or refractory classical Hodgkin lymphoma characterized by early relapse, B-symptoms at relapse, extensive disease at a contraindicated radiotherapy field, relapse at a prior radiotherapy field, or a combination thereof.

23. The method of claim 21 or 22, wherein the classical Hodgkin lymphoma is stage IIB with bulky disease, IIIA with E-lesions with or without bulky disease, IIIB, or IV.

24. The method of any one of claims 1-18, wherein the hematological cancer comprises a non-Hodgkin lymphoma.

25. The method of claim 24, wherein the non-Hodgkin lymphoma comprises diffuse large B-cell lymphoma, anaplastic large cell lymphoma, Burkitt lymphoma, Burkitt-like lymphoma, lymphoblastic lymphoma, mantle cell lymphoma, peripheral T-cell lymphoma, follicular lymphoma, cutaneous T-cell lymphoma, lymphoplasmactyic lymphoma, marginal zone lymphoma, mucosa-associated lymphoid tissue lymphoma, central nervous system lymphoma, chronic lymphocytic leukemia, small lymphocytic lymphoma, primary mediastinal large B-cell lymphoma, adult T-cell lymphoma, angioimmunoblastic T-cell lymphoma, Waldenström macroglobulinemia, mycosis fungoides, or Sézary syndrome.

26. The method of claim 24 or 25, wherein the non-Hodgkin lymphoma comprises a Burkitt lymphoma, Burkitt-like lymphoma, diffuse large B-cell lymphoma, lymphoblastic lymphoma, or anaplastic large cell lymphoma.

27. The method of any one of claims 24-26, wherein the non-Hodgkin lymphoma is a recurrent or refractory non-Hodgkin lymphoma characterized by two or more of a decreased performance status, elevated serum lactate dehydrogenase, and stage III or IV.

28. The method of any one of claims 24-27, wherein the non-Hodgkin lymphoma is stage III or IV.

29. The method of claims 1-18, wherein the hematological cancer comprises acute myeloid leukemia, chronic lymphocytic leukemia, hairy cell leukemia, acute lymphocytic leukemia, acute promyelocytic leukemia, chronic myeloid leukemia, chronic myelomonocytic leukemia, juvenile myelomonocytic leukemia, myeloproliferative neoplasms, systemic mastocytosis, prolymphocytic leukemia, large granular lymphocytic leukemia, or blastic plasmacytoid dendritic cell neoplasm.

30. The method of any one of claims 1-29, wherein one or more immune cells in tumor tissue from the subject express LAG-3.

31. The method of claim 30, wherein at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the immune cells express LAG-3.

32. The method of claim 30 or 31, wherein at least about 1% of the immune cells express LAG-3.

33. The method of any one of claims 30-32, wherein the immune cells are tumor-infiltrating lymphocytes.

34. The method of claim 33, wherein the tumor-infiltrating lymphocytes are $CD8^+$ cells.

35. The method of any one of claims 1-34, wherein one or more tumor cells in tumor tissue from the subject express PD-L1.

36. The method of claim 35, wherein at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the tumor cells express PD-L1.

37. The method of claim 35 or 36, wherein at least about 1% of the tumor cells express PD-L1.

38. The method of any one of claims 1-37, wherein the LAG-3 antagonist is an anti-LAG-3 antibody.

39. The method of claim 38, wherein the anti-LAG-3 antibody is a full-length antibody.

40. The method of claim 38 or 39, wherein the anti-LAG-3 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody.

41. The method of claim 40, wherein the multispecific antibody is a dual-affinity re-targeting antibody (DART), a DVD-Ig, or bispecific antibody.

42. The method of claim 38, wherein the anti-LAG-3 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

43. The method of any one of claims 38-42, wherein the anti-LAG-3 antibody is BMS-986016 (relatlimab), IMP731 (H5L7BW), MK4280 (28G-10, favezelimab), REGN3767 (fianlimab), GSK2831781, humanized BAP050, IMP-701 (LAG525, ieramilimab), aLAG3(0414), aLAG3(0416), Sym022, TSR-033, TSR-075, XmAb841 (XmAb22841), MGD013 (tebotelimab), BI754111, FS118, P 13B02-30, AVA-017, 25F7, AGEN1746, RO7247669, INCAGN02385, IBI-110, EMB-02, IBI-323, LBL-007, ABL501, or comprises an antigen binding portion thereof.

44. The method of any one of claims 38-43, wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4.

45. The method of any one of claims 38-44, wherein the anti-LAG-3 antibody comprises:

(a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:5;

(b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:6;

(c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:7;

(d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:8;

(e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:9; and

(f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:10.

46. The method of any one of claims 38-45, wherein the anti-LAG-3 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:3 and 4, respectively.

47. The method of any one of claims 38-41 and 43-46, wherein the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:1 and 2, respectively.

48. The method of any one of claims 38-41 and 43-46, wherein the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:21 and 2, respectively.

49. The method of any one of claims 1-37, wherein the LAG-3 antagonist is a soluble LAG-3 polypeptide.

50. The method of claim 49, wherein the soluble LAG-3 polypeptide is a fusion polypeptide.

51. The method of claim 49 or 50, wherein the soluble LAG-3 polypeptide comprises a ligand binding fragment of the LAG-3 extracellular domain.

52. The method of claim 51, wherein the ligand binding fragment of the LAG-3 extracellular domain comprises an amino acid sequence with at least about 90%, at least about 95%, at least about 98%, at least about 99%, or about 100% sequence identity to SEQ ID NO:22.

53. The method of any one of claims 49-52, wherein the soluble LAG-3 polypeptide further comprises a half-life extending moiety.

54. The method of claim 53, wherein the half-life extending moiety comprises an immunoglobulin constant region or a portion thereof, an immunoglobulin-binding

polypeptide, an immunoglobulin G (IgG), albumin-binding polypeptide (ABP), a PASylation moiety, a HESylation moiety, XTEN, a PEGylation moiety, an Fc region, or any combination thereof.

55. The method of any one of claims 49-54, wherein the soluble LAG-3 polypeptide is IMP321 (eftilagimod alpha).

56. The method of any one of claims 1-55, wherein the LAG-3 antagonist is formulated for intravenous administration.

57. The method of any one of claims 1-56, wherein the LAG-3 antagonist is administered at a flat dose.

58. The method of any one of claims 1-57, wherein the LAG-3 antagonist is administered at a dose of from at least about 0.25 mg to about 2000 mg, about 0.25 mg to about 1600 mg, about 0.25 mg to about 1200 mg, about 0.25 mg to about 800 mg, about 0.25 mg to about 400 mg, about 0.25 mg to about 100 mg, about 0.25 mg to about 50 mg, about 0.25 mg to about 40 mg, about 0.25 mg to about 30 mg, about 0.25 mg to about 20 mg, about 20 mg to about 2000 mg, about 20 mg to about 1600 mg, about 20 mg to about 1200 mg, about 20 mg to about 800 mg, about 20 mg to about 400 mg, about 20 mg to about 100 mg, about 100 mg to about 2000 mg, about 100 mg to about 1800 mg, about 100 mg to about 1600 mg, about 100 mg to about 1400 mg, about 100 mg to about 1200 mg, about 100 mg to about 1000 mg, about 100 mg to about 800 mg, about 100 mg to about 600 mg, about 100 mg to about 400 mg, about 400 mg to about 2000 mg, about 400 mg to about 1800 mg, about 400 mg to about 1600 mg, about 400 mg to about 1400 mg, about 400 mg to about 1200 mg, or about 400 mg to about 1000 mg.

59. The method of any one of claims 1-58, wherein the LAG-3 antagonist is administered at a dose of about 0.25 mg, about 0.5 mg, about 0.75 mg, about 1 mg, about 1.25 mg, about 1.5 mg, about 1.75 mg, about 2 mg, about 2.25 mg, about 2.5 mg, about 2.75 mg, about 3 mg, about 3.25 mg, about 3.5 mg, about 3.75 mg, about 4 mg, about 4.25 mg, about 4.5 mg, about 4.75 mg, about 5 mg, about 5.25 mg, about 5.5 mg, about 5.75 mg, about 6 mg, about 6.25 mg, about 6.5 mg, about 6.75 mg, about 7 mg, about 7.25 mg, about 7.5 mg, about

7.75 mg, about 8 mg, about 8.25 mg, about 8.5 mg, about 8.75 mg, about 9 mg, about 9.25 mg, about 9.5 mg, about 9.75 mg, about 10 mg, about 20 mg, about 30 mg, about 40 mg, about 50 mg, about 60 mg, about 70 mg, about 80 mg, about 90 mg, about 100 mg, about 110 mg, about 120 mg, about 130 mg, about 140 mg, about 150 mg, about 160 mg, about 170 mg, about 180 mg, about 190 mg, about 200 mg, about 210 mg, about 220 mg, about 230 mg, about 240 mg, about 250 mg, about 260 mg, about 270 mg, about 280 mg, about 290 mg, about 300 mg, about 310 mg, about 320 mg, about 330 mg, about 340 mg, about 350 mg, about 360 mg, about 370 mg, about 380 mg, about 390 mg, about 400 mg, about 410 mg, about 420 mg, about 430 mg, about 440 mg, about 450 mg, about 460 mg, about 470 mg, about 480 mg, about 490 mg, about 500 mg, about 510 mg, about 520 mg, about 530 mg, about 540 mg, about 550 mg, about 560 mg, about 570 mg, about 580 mg, about 590 mg, about 600 mg, about 610 mg, about 620 mg, about 630 mg, about 640 mg, about 650 mg, about 660 mg, about 670 mg, about 680 mg, about 690 mg, about 700 mg, about 710 mg, about 720 mg, about 730 mg, about 740 mg, about 750 mg, about 760 mg, about 770 mg, about 780 mg, about 790 mg, about 800 mg, about 810 mg, about 820 mg, about 830 mg, about 840 mg, about 850 mg, about 860 mg, about 870 mg, about 880 mg, about 890 mg, about 900 mg, about 910 mg, about 920 mg, about 930 mg, about 940 mg, about 950 mg, about 960 mg, about 970 mg, about 980 mg, about 990 mg, about 1000 mg, about 1040 mg, about 1080 mg, about 1100 mg, about 1140 mg, about 1180 mg, about 1200 mg, about 1240 mg, about 1280 mg, about 1300 mg, about 1340 mg, about 1380 mg, about 1400 mg, about 1440 mg, about 1480 mg, about 1500 mg, about 1540 mg, about 1580 mg, about 1600 mg, about 1640 mg, about 1680 mg, about 1700 mg, about 1740 mg, about 1780 mg, about 1800 mg, about 1840 mg, about 1880 mg, about 1900 mg, about 1940 mg, about 1980 mg, or about 2000 mg.

60. The method of any one of claims 1-56, wherein the LAG-3 antagonist is administered at a weight-based dose.

61. The method of any one of claims 1-56 or 60, wherein the LAG-3 antagonist is administered at a dose from about 0.003 mg/kg to about 25 mg/kg, about 0.003 mg/kg to about 20 mg/kg, about 0.003 mg/kg to about 15 mg/kg, about 0.003 mg/kg to about 10 mg/kg, about 0.003 mg/kg to about 5 mg/kg, about 0.003 mg/kg to about 1 mg/kg, about 0.003 mg/kg to about 0.9 mg/kg, about 0.003 mg/kg to about 0.8 mg/kg, about 0.003 mg/kg to about 0.7 mg/kg,

about 0.003 mg/kg to about 0.6 mg/kg, about 0.003 mg/kg to about 0.5 mg/kg, about 0.003 mg/kg to about 0.4 mg/kg, about 0.003 mg/kg to about 0.3 mg/kg, about 0.003 mg/kg to about 0.2 mg/kg, about 0.003 mg/kg to about 0.1 mg/kg, about 0.1 mg/kg to about 25 mg/kg, about 0.1 mg/kg to about 20 mg/kg, about 0.1 mg/kg to about 15 mg/kg, about 0.1 mg/kg to about 10 mg/kg, about 0.1 mg/kg to about 5 mg/kg, about 0.1 mg/kg to about 1 mg/kg, about 1 mg/kg to about 25 mg/kg, about 1 mg/kg to about 20 mg/kg, about 1 mg/kg to about 15 mg/kg, about 1 mg/kg to about 10 mg/kg, about 1 mg/kg to about 5 mg/kg, about 5 mg/kg to about 25 mg/kg, about 5 mg/kg to about 20 mg/kg, about 5 mg/kg to about 15 mg/kg, about 5 mg/kg to about 10 mg/kg, about 10 mg/kg to about 25 mg/kg, about 10 mg/kg to about 20 mg/kg, about 10 mg/kg to about 15 mg/kg, about 15 mg/kg to about 25 mg/kg, about 15 mg/kg to about 20 mg/kg, or about 20 mg/kg to about 25 mg/kg.

62. The method of any one of claims 1-56 or 60-61, wherein the LAG-3 antagonist is administered at a dose of about 0.003 mg/kg, about 0.004 mg/kg, about 0.005 mg/kg, about 0.006 mg/kg, about 0.007 mg/kg, about 0.008 mg/kg, about 0.009 mg/kg, about 0.01 mg/kg, about 0.02 mg/kg, about 0.03 mg/kg, about 0.04 mg/kg, about 0.05 mg/kg, about 0.06 mg/kg, about 0.07 mg/kg, about 0.08 mg/kg, about 0.09 mg/kg, about 0.1 mg/kg, about 0.2 mg/kg, about 0.3 mg/kg, about 0.4 mg/kg, about 0.5 mg/kg, about 0.6 mg/kg, about 0.7 mg/kg, about 0.8 mg/kg, about 0.9 mg/kg, about 1.0 mg/kg, about 2.0 mg/kg, about 3.0 mg/kg, about 4.0 mg/kg, about 5.0 mg/kg, about 6.0 mg/kg, about 7.0 mg/kg, about 8.0 mg/kg, about 9.0 mg/kg, about 10.0 mg/kg, about 11.0 mg/kg, about 12.0 mg/kg, about 13.0 mg/kg, about 14.0 mg/kg, about 15.0 mg/kg, about 16.0 mg/kg, about 17.0 mg/kg, about 18.0 mg/kg, about 19.0 mg/kg, about 20.0 mg/kg, about 21.0 mg/kg, about 22.0 mg/kg, about 23.0 mg/kg, about 24.0 mg/kg, or about 25.0 mg/kg.

63. The method of any one of claims 57-62, wherein the dose is administered once about every one week, once about every two weeks, once about every three weeks, once about every four weeks, once about every five weeks, once about every six weeks, once about every seven weeks, once about every eight weeks, once about every nine weeks, once about every ten weeks, once about every eleven weeks, or once about every twelve weeks.

64. The method of any one of claims 1-63, further comprising administering to the subject an additional therapeutic agent.

65. The method of claim 64, wherein the additional therapeutic agent comprises an anti-cancer agent.

66. The method of claim 65, wherein the anti-cancer agent comprises a tyrosine kinase inhibitor, an anti-angiogenesis agent, a checkpoint inhibitor, a checkpoint stimulator, a chemotherapeutic agent, an immunotherapeutic agent, a platinum agent, an alkylating agent, a taxane, a nucleoside analog, an antimetabolite, a topisomerase inhibitor, an anthracycline, a vinca alkaloid, or any combination thereof.

67. The method of claim 66, wherein the tyrosine kinase inhibitor comprises afatinib, erlotinib, dacomitinib, gefitinib, osimertinib, alectinib, brigatinib, ceritinib, crizotinib, lorlatinib, entrectinib, dabrafenib, trametinib, vemurafenib, larotrectinib, or any combination thereof.

68. The method of claim 66, wherein the anti-angiogenesis agent comprises an inhibitor of a vascular endothelial growth factor (VEGF), VEGF receptor (VEGFR), platelet-derived growth factor (PDGF), PDGF receptor (PDGFR), angiopoietin (Ang), tyrosine kinase with Ig-like and EGF-like domains (Tie) receptor, hepatocyte growth factor (HGF), tyrosine-protein kinase Met (c-MET), C-type lectin family 14 member A (CLEC14A), multimerin 2 (MMRN2), shock protein 70-1A (HSP70-1A), a epidermal growth factor (EGF), EGF receptor (EGFR), or any combination thereof.

69. The method of claim 66 or 68, wherein the anti-angiogenesis agent comprises bevacizumab, ramucirumab, aflibercept, tanibirumab, olaratumab, nesvacumab, AMG780, MEDI3617, vanucizumab, rilotumumab, ficlatuzumab, TAK-701, onartuzumab, emibetuzumab, or any combination thereof.

70. The method of claim 66, wherein the checkpoint inhibitor comprises a programmed death-1 (PD-1) pathway inhibitor, a cytotoxic T-lymphocyte-associated protein 4 (CTLA-4) inhibitor, a T cell immunoglobulin and ITIM domain (TIGIT) inhibitor, a T cell immunoglobulin and mucin-domain containing-3 (TIM-3) inhibitor, a TIM-1 inhibitor, a TIM-4 inhibitor, a B7-H3 inhibitor, a B7-H4 inhibitor, a B and T cell lymphocyte attenuator (BTLA) inhibitor, a V-domain Ig suppressor of T cell activation (VISTA) inhibitor, an indoleamine 2,3-dioxygenase (IDO) inhibitor, a nicotinamide adenine dinucleotide

phosphate oxidase isoform 2 (NOX2) inhibitor, a killer-cell immunoglobulin-like receptor (KIR) inhibitor, an adenosine A2a receptor (A2aR) inhibitor, a transforming growth factor beta (TGF-β) inhibitor, a phosphoinositide 3-kinase (PI3K) inhibitor, a CD47 inhibitor, a CD48 inhibitor, a CD73 inhibitor, a CD113 inhibitor, a sialic acid-binding immunoglobulin-like lectin-7 (SIGLEC-7) inhibitor, a SIGLEC-9 inhibitor, a SIGLEC-15 inhibitor, a glucocorticoid-induced TNFR-related protein (GITR) inhibitor, a galectin-1 inhibitor, a galectin-9 inhibitor, a carcinoembryonic antigen-related cell adhesion molecule-1 (CEACAM-1) inhibitor, a G protein-coupled receptor 56 (GPR56) inhibitor, a glycoprotein A repetitions predominant (GARP) inhibitor, a 2B4 inhibitor, a programmed death-1 homolog (PD1H) inhibitor, a leukocyte-associated immunoglobulin-like receptor 1 (LAIR1) inhibitor, or any combination thereof.

71. The method of any one of claims 66 or 70, wherein the checkpoint inhibitor comprises a PD-1 pathway inhibitor.

72. The method of claim 70 or 71, wherein the PD-1 pathway inhibitor is an anti-PD-1 antibody and/or an anti-PD-L1 antibody.

73. The method of any one of claims 70-72, wherein the PD-1 pathway inhibitor is an anti-PD-1 antibody.

74. The method of claim 72 or 73, wherein the anti-PD-1 antibody is a full-length antibody.

75. The method of any one of claims 72-74, wherein the anti-PD-1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody.

76. The method of claim 75, wherein the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

77. The method of claim 72 or 73, wherein the anti-PD-1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

78. The method of any one of claims 72-77, wherein the anti-PD-1 antibody is nivolumab, pembrolizumab, PDR001 (spartalizumab), MEDI-0680, TSR-042, cemiplimab, JS001, PF-06801591, BGB-A317, BI 754091, INCSHR1210, GLS-010, AM-001, STI-1110, AGEN2034, MGA012, BCD-100, IBI308, SSI-361, or comprises an antigen binding portion thereof.

79. The method of any one of claims 72-78, wherein the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14.

80. The method of any one of claims 72-79, wherein the anti-PD-1 antibody comprises:
(a) a heavy chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:15;
(b) a heavy chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:16;
(c) a heavy chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:17;
(d) a light chain variable region CDR1 comprising the sequence set forth in SEQ ID NO:18;
(e) a light chain variable region CDR2 comprising the sequence set forth in SEQ ID NO:19; and
(f) a light chain variable region CDR3 comprising the sequence set forth in SEQ ID NO:20.

81. The method of any one of claims 72-80 wherein the anti-PD-1 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:13 and 14, respectively.

82. The method of any one of claims 72-76 or 78-81, wherein the anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

83. The method of claim 70 or 71, wherein the PD-1 pathway inhibitor is a soluble PD-L2 polypeptide.

84. The method of claim 83, wherein the soluble PD-L2 polypeptide is a fusion polypeptide.

85. The method of claim 83 or 84, wherein the soluble PD-L2 polypeptide comprises a ligand binding fragment of the PD-L2 extracellular domain.

86. The method of any one of claims 83-85, wherein the soluble PD-L2 polypeptide further comprises a half-life extending moiety.

87. The method of claim 86, wherein the half-life extending moiety comprises an immunoglobulin constant region or a portion thereof, an immunoglobulin-binding polypeptide, an immunoglobulin G (IgG), albumin-binding polypeptide (ABP), a PASylation moiety, a HESylation moiety, XTEN, a PEGylation moiety, an Fc region, or any combination thereof.

88. The method of any one of claims 83-87, wherein the soluble PD-L2 polypeptide is AMP-224.

89. The method of any one of claims 70-72, wherein the PD-1 pathway inhibitor is an anti-PD-L1 antibody.

90. The method of claim 72 or 89, wherein the anti-PD-L1 antibody is a full-length antibody.

91. The method of any one of claims 72 or 89-90, wherein the anti-PD-L1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody.

92. The method of claim 91, wherein the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

93. The method of claim 72 or 89, wherein the anti-PD-L1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

94. The method of any one of claims 72 or 89-93, wherein the anti-PD-L1 antibody is BMS-936559, atezolizumab, durvalumab, avelumab, STI-1014, CX-072, KN035, LY3300054, BGB-A333, ICO 36, FAZ053, CK-301, or comprises an antigen binding portion thereof.

95. The method of claim 70 or 71, wherein the PD-1 pathway inhibitor is BMS-986189.

96. The method of any one of claims 66 or 70-95, wherein the checkpoint inhibitor comprises a CTLA-4 inhibitor.

97. The method of claim 96, wherein the CTLA-4 inhibitor is an anti-CTLA-4 antibody.

98. The method of claim 97, wherein the anti-CTLA-4 antibody is a full-length antibody.

99. The method of claim 97 or 98, wherein the anti-CTLA-4 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody.

100. The method of claim 99, wherein the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

101. The method of claim 97, wherein the anti-CTLA-4 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

102. The method of any one of claims 97-101, wherein the anti-CTLA-4 antibody is ipilimumab, tremelimumab, MK-1308, AGEN-1884, or comprises an antigen binding portion thereof.

103. The method of any one of claims 66 or 70-102, wherein the checkpoint inhibitor is formulated for intravenous administration.

104. The method of any one of claims 66 or 70-103, wherein the LAG-3 antagonist and the checkpoint inhibitor are formulated separately.

105. The method of claim 104, wherein each checkpoint inhibitor is formulated separately when the checkpoint inhibitor comprises more than one checkpoint inhibitor.

106. The method of any one of claims 66 or 70-103, wherein the LAG-3 antagonist and the checkpoint inhibitor are formulated together.

107. The method of claim 106, wherein two or more checkpoint inhibitors are formulated together when the checkpoint inhibitor comprises more than one checkpoint inhibitor.

108. The method of claim 104 or 105, wherein the checkpoint inhibitor is administered before the LAG-3 antagonist.

109. The method of claim 104 or 105, wherein the LAG-3 antagonist is administered before the checkpoint inhibitor.

110. The method of any one of claims 104-107, wherein the LAG-3 antagonist and the checkpoint inhibitor are administered concurrently.

111. The method of any one of claims 66 or 70-110, wherein the checkpoint inhibitor is administered at a flat dose.

112. The method of any one of claims 66 or 70-111, wherein the checkpoint inhibitor is administered at a dose of from at least about 0.25 mg to about 2000 mg, about 0.25 mg to about 1600 mg, about 0.25 mg to about 1200 mg, about 0.25 mg to about 800 mg, about 0.25 mg to about 400 mg, about 0.25 mg to about 100 mg, about 0.25 mg to about 50 mg, about 0.25 mg to about 40 mg, about 0.25 mg to about 30 mg, about 0.25 mg to about 20 mg, about 20 mg to about 2000 mg, about 20 mg to about 1600 mg, about 20 mg to about 1200 mg, about 20 mg to about 800 mg, about 20 mg to about 400 mg, about 20 mg to about 100 mg, about 100 mg to about 2000 mg, about 100 mg to about 1800 mg, about 100 mg to about 1600 mg, about 100 mg to about 1400 mg, about 100 mg to about 1200 mg, about 100 mg to about 1000 mg, about 100 mg to about 800 mg, about 100 mg to about 600 mg, about 100 mg to about 400 mg, about 400 mg to about 2000 mg, about 400 mg to about 1800 mg, about 400 mg to about 1600 mg, about 400 mg to about 1400 mg, about 400 mg to about 1200 mg, or about 400 mg to about 1000 mg.

113. The method of any one of claims 66 or 70-112, wherein the checkpoint inhibitor is administered at a dose of about 0.25 mg, about 0.5 mg, about 0.75 mg, about 1 mg, about 1.25 mg, about 1.5 mg, about 1.75 mg, about 2 mg, about 2.25 mg, about 2.5 mg, about 2.75 mg, about 3 mg, about 3.25 mg, about 3.5 mg, about 3.75 mg, about 4 mg, about 4.25 mg, about 4.5 mg, about 4.75 mg, about 5 mg, about 5.25 mg, about 5.5 mg, about 5.75 mg, about 6 mg, about 6.25 mg, about 6.5 mg, about 6.75 mg, about 7 mg, about 7.25 mg, about 7.5 mg, about 7.75 mg, about 8 mg, about 8.25 mg, about 8.5 mg, about 8.75 mg, about 9 mg, about 9.25 mg, about 9.5 mg, about 9.75 mg, about 10 mg, about 20 mg, about 30 mg, about 40 mg, about 50 mg, about 60 mg, about 70 mg, about 80 mg, about 90 mg, about 100 mg, about 110 mg, about 120 mg, about 130 mg, about 140 mg, about 150 mg, about 160 mg, about 170 mg, about 180 mg, about 190 mg, about 200 mg, about 210 mg, about 220 mg, about 230 mg, about 240 mg, about 250 mg, about 260 mg, about 270 mg, about 280 mg, about 290 mg, about 300 mg, about 310 mg, about 320 mg, about 330 mg, about 340 mg, about 350 mg, about 360 mg, about 370 mg, about 380 mg, about 390 mg, about 400 mg, about 410 mg, about 420 mg, about 430 mg, about 440 mg, about 450 mg, about 460 mg, about 470 mg, about 480 mg, about 490 mg, about 500 mg, about 510 mg, about 520 mg, about 530 mg, about 540 mg, about 550 mg, about 560 mg, about 570 mg, about 580 mg, about 590 mg, about 600 mg, about 610 mg, about 620 mg, about 630 mg, about 640 mg, about 650 mg, about 660 mg, about 670 mg, about 680 mg, about 690 mg, about 700 mg, about 710 mg, about 720 mg, about 730 mg, about 740 mg, about 750 mg, about 760 mg, about 770 mg, about 780 mg, about 790 mg, about 800 mg, about 810 mg, about 820 mg, about 830 mg, about 840 mg, about 850 mg, about 860 mg, about 870 mg, about 880 mg, about 890 mg, about 900 mg, about 910 mg, about 920 mg, about 930 mg, about 940 mg, about 950 mg, about 960 mg, about 970 mg, about 980 mg, about 990 mg, about 1000 mg, about 1040 mg, about 1080 mg, about 1100 mg, about 1140 mg, about 1180 mg, about 1200 mg, about 1240 mg, about 1280 mg, about 1300 mg, about 1340 mg, about 1380 mg, about 1400 mg, about 1440 mg, about 1480 mg, about 1500 mg, about 1540 mg, about 1580 mg, about 1600 mg, about 1640 mg, about 1680 mg, about 1700 mg, about 1740 mg, about 1780 mg, about 1800 mg, about 1840 mg, about 1880 mg, about 1900 mg, about 1940 mg, about 1980 mg, or about 2000 mg.

114. The method of any one of claims 66 or 70-110, wherein the checkpoint inhibitor is administered as a weight-based dose.

115. The method of any one of claims 66, 70-110, or 114, wherein the checkpoint inhibitor is administered at a dose from about 0.003 mg/kg to about 25 mg/kg, about 0.003 mg/kg to about 20 mg/kg, about 0.003 mg/kg to about 15 mg/kg, about 0.003 mg/kg to about 10 mg/kg, about 0.003 mg/kg to about 5 mg/kg, about 0.003 mg/kg to about 1 mg/kg, about 0.003 mg/kg to about 0.9 mg/kg, about 0.003 mg/kg to about 0.8 mg/kg, about 0.003 mg/kg to about 0.7 mg/kg, about 0.003 mg/kg to about 0.6 mg/kg, about 0.003 mg/kg to about 0.5 mg/kg, about 0.003 mg/kg to about 0.4 mg/kg, about 0.003 mg/kg to about 0.3 mg/kg, about 0.003 mg/kg to about 0.2 mg/kg, about 0.003 mg/kg to about 0.1 mg/kg, about 0.1 mg/kg to about 25 mg/kg, about 0.1 mg/kg to about 20 mg/kg, about 0.1 mg/kg to about 15 mg/kg, about 0.1 mg/kg to about 10 mg/kg, about 0.1 mg/kg to about 5 mg/kg, about 0.1 mg/kg to about 1 mg/kg, about 1 mg/kg to about 25 mg/kg, about 1 mg/kg to about 20 mg/kg, about 1 mg/kg to about 15 mg/kg, about 1 mg/kg to about 10 mg/kg, about 1 mg/kg to about 5 mg/kg, about 5 mg/kg to about 25 mg/kg, about 5 mg/kg to about 20 mg/kg, about 5 mg/kg to about 15 mg/kg, about 5 mg/kg to about 10 mg/kg, about 10 mg/kg to about 25 mg/kg, about 10 mg/kg to about 20 mg/kg, about 10 mg/kg to about 15 mg/kg, about 15 mg/kg to about 25 mg/kg, about 15 mg/kg to about 20 mg/kg, or about 20 mg/kg to about 25 mg/kg.

116. The method of any one of claims 66, 70-110, or 114-115, wherein the checkpoint inhibitor is administered at a dose of about 0.003 mg/kg, about 0.004 mg/kg, about 0.005 mg/kg, about 0.006 mg/kg, about 0.007 mg/kg, about 0.008 mg/kg, about 0.009 mg/kg, about 0.01 mg/kg, about 0.02 mg/kg, about 0.03 mg/kg, about 0.04 mg/kg, about 0.05 mg/kg, about 0.06 mg/kg, about 0.07 mg/kg, about 0.08 mg/kg, about 0.09 mg/kg, about 0.1 mg/kg, about 0.2 mg/kg, about 0.3 mg/kg, about 0.4 mg/kg, about 0.5 mg/kg, about 0.6 mg/kg, about 0.7 mg/kg, about 0.8 mg/kg, about 0.9 mg/kg, about 1.0 mg/kg, about 2.0 mg/kg, about 3.0 mg/kg, about 4.0 mg/kg, about 5.0 mg/kg, about 6.0 mg/kg, about 7.0 mg/kg, about 8.0 mg/kg, about 9.0 mg/kg, about 10.0 mg/kg, about 11.0 mg/kg, about 12.0 mg/kg, about 13.0 mg/kg, about 14.0 mg/kg, about 15.0 mg/kg, about 16.0 mg/kg, about 17.0 mg/kg, about 18.0 mg/kg, about 19.0 mg/kg, about 20.0 mg/kg, about 21.0 mg/kg, about 22.0 mg/kg, about 23.0 mg/kg, about 24.0 mg/kg, or about 25.0 mg/kg.

117. The method of any one of claims 111-116, wherein the dose is administered once about every one week, once about every two weeks, once about every three weeks, once about every four weeks, once about every five weeks, once about every six weeks, once about

every seven weeks, once about every eight weeks, once about every nine weeks, once about every ten weeks, once about every eleven weeks, or once about every twelve weeks.

118. A method of treating a human subject afflicted with recurrent or refractory classical Hodgkin lymphoma, the method comprising administering to the subject:

(a) about 160 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody,

(b) about 80 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody,

(c) about 2 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, or

(d) about 1 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody,

wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and

wherein the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

119. The method of claim 118, wherein the subject is less than about 30 years old.

120. The method of claim 118 or 119, wherein the subject is less than about 18 years old.

121. The method of any one of claims 118-120, wherein the subject is greater than about 16 years old and has a Karnofsky performance score of greater than or equal to 60.

122. A method of treating a human subject afflicted with recurrent or refractory classical Hodgkin lymphoma, the method comprising administering to the subject:

(a) about 2 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, or

(b) about 1 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody,

wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and

wherein the subject has a weight of less than about 40 kg, is less than about 12 years old, or both.

123. The method of any one of claims 118-120, wherein the subject is less than or equal to about 16 years old.

124. The method of claim 122 or 123, wherein the subject has a Lansky play-performance score of greater than or equal to 60.

125. The method of any one of claims 118-124, wherein the recurrent or refractory classical Hodgkin lymphoma is characterized by early relapse, B-symptoms at relapse, extensive disease at a contraindicated radiotherapy field, relapse at a prior radiotherapy field, or a combination thereof.

126. The method of any one of claims 118-125, wherein the recurrent or refractory classical Hodgkin lymphoma is stage IIB with bulky disease, IIIA with E-lesions with or without bulky disease, IIIB, or IV.

127. A method of treating a human subject afflicted with recurrent or refractory non-Hodgkin lymphoma, the method comprising administering to the subject:

(a) about 160 mg of an anti-LAG-3 antibody and about 480 mg of an anti-PD-1 antibody,

(b) about 80 mg of anti-LAG-3 antibody and about 480 mg of anti-PD-1 antibody,

(c) about 2 mg/kg of anti-LAG-3 antibody and about 6 mg/kg of anti-PD-1 antibody, or

(d) about 1 mg/kg of anti-LAG-3 antibody and about 6 mg/kg of anti-PD-1 antibody,

wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and

wherein the subject is greater than or equal to about 12 years old and has a weight of greater than or equal to about 40 kg.

128. The method of claim 127, wherein the subject is less than about 30 years old.

129. The method of claim 127 or 128, wherein the subject is less than about 18 years old.

130. The method of any one of claims 127-129, wherein the subject is greater than about 16 years old and has a Karnofsky performance score of greater than or equal to 60.

131. A method of treating a human subject afflicted with recurrent or refractory non-Hodgkin lymphoma, the method comprising administering to the subject:

(a) about 2 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody, or

(b) about 1 mg/kg of an anti-LAG-3 antibody and about 6 mg/kg of an anti-PD-1 antibody,

wherein the anti-LAG-3 antibody comprises CDR1, CDR2 and CDR3 domains of the heavy chain variable region having the sequence set forth in SEQ ID NO:3, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:4, and the anti-PD-1 antibody comprises CDR1, CDR2 and CDR3 domains

of the heavy chain variable region having the sequence set forth in SEQ ID NO:13, and CDR1, CDR2 and CDR3 domains of the light chain variable region having the sequence set forth in SEQ ID NO:14, and

wherein the subject has a weight of less than about 40 kg, is less than about 12 years old, or both.

132. The method of any one of claims 127-129, wherein the subject is less than or equal to about 16 years old.

133. The method of claim 131 or 132, wherein the subject has a Lansky play-performance score of greater than or equal to 60.

134. The method of any one of claims 127-133, wherein the recurrent or refractory non-Hodgkin lymphoma comprises diffuse large B-cell lymphoma, anaplastic large cell lymphoma, Burkitt lymphoma, Burkitt-like lymphoma, lymphoblastic lymphoma, mantle cell lymphoma, peripheral T-cell lymphoma, follicular lymphoma, cutaneous T-cell lymphoma, lymphoplasmactyic lymphoma, marginal zone lymphoma, mucosa-associated lymphoid tissue lymphoma, central nervous system lymphoma, chronic lymphocytic leukemia, small lymphocytic lymphoma, primary mediastinal large B-cell lymphoma, adult T-cell lymphoma, angioimmunoblastic T-cell lymphoma, Waldenström macroglobulinemia, mycosis fungoides, or Sézary syndrome.

135. The method of any one of claims 127-134, wherein the recurrent or refractory non-Hodgkin lymphoma comprises a Burkitt lymphoma, Burkitt-like lymphoma, diffuse large B-cell lymphoma, lymphoblastic lymphoma, or anaplastic large cell lymphoma.

136. The method of any one of claims 127-135, wherein the recurrent or refractory non-Hodgkin lymphoma is characterized by two or more of a decreased performance status, elevated serum lactate dehydrogenase, and stage III or IV.

137. The method of any one of claims 127-136, wherein the recurrent or refractory non-Hodgkin lymphoma is stage III or IV.

138. The method of any one of claims 118-137, wherein one or more immune cells in tumor tissue from the subject express LAG-3.

139. The method of claim 138, wherein at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the immune cells express LAG-3.

140. The method of claim 138 or 139, wherein at least about 1% of the immune cells express LAG-3.

141. The method of any one of claims 138-140, wherein the immune cells are tumor-infiltrating lymphocytes.

142. The method of claim 141, wherein the tumor-infiltrating lymphocytes are $CD8^+$ cells.

143. The method of any one of claims 118-142, wherein one or more tumor cells in tumor tissue from the subject express PD-L1.

144. The method of claim 143, wherein at least about 1%, at least about 3%, at least about 5%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, or about 100% of the tumor cells express PD-L1.

145. The method of claim 143 or 144, wherein at least about 1% of the tumor cells express PD-L1.

146. The method of any one of claims 118-145, wherein:

(a) the anti-LAG-3 antibody comprises a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:5, SEQ ID NO:6, and SEQ ID NO:7, respectively, and a light chain variable region CDR1, CDR2, and

CDR3 comprising the sequence set forth in SEQ ID NO:8, SEQ ID NO:9, and SEQ ID NO:10, respectively, and

(b) the anti-PD-1 antibody comprises a heavy chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:15, SEQ ID NO:16, and SEQ ID NO:17, respectively, and a light chain variable region CDR1, CDR2, and CDR3 comprising the sequence set forth in SEQ ID NO:18, SEQ ID NO:19, and SEQ ID NO:20, respectively.

147. The method of any one of claims 118-146, wherein the anti-LAG-3 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:3 and 4, respectively, and the anti-PD-1 antibody comprises heavy and light chain variable regions comprising the sequences set forth in SEQ ID NOs:13 and 14, respectively.

148. The method of any one of claims 118-147, wherein the anti-LAG-3 antibody and/or the anti-PD-1 antibody is a full-length antibody.

149. The method of any one of claims 118-148, wherein the anti-LAG-3 antibody and/or anti-PD-1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody.

150. The method of claim 149, wherein the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

151. The method of claim 118-147, wherein the anti-LAG-3 antibody and/or anti-PD-1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

152. The method of any one of claims 118-150, wherein the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:1 and 2, respectively, and the anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

153. The method of any one of claims 118-150, wherein the anti-LAG-3 antibody comprises heavy and light chains comprising the sequences set forth in SEQ ID NOs:21 and 2,

respectively, and the anti-PD-1 antibody comprises heavy and light chains comprising the sequences as set forth in SEQ ID NOs:11 and 12, respectively.

154. The method of any one of claims 118-153, further comprising administering to the subject an additional therapeutic agent.

155. The method of claim 154, wherein the additional therapeutic agent comprises an anti-cancer agent.

156. The method of claim 155, wherein the anti-cancer agent comprises a tyrosine kinase inhibitor, an anti-angiogenesis agent, a checkpoint inhibitor, a checkpoint stimulator, a chemotherapeutic agent, an immunotherapeutic agent, a platinum agent, an alkylating agent, a taxane, a nucleoside analog, an antimetabolite, a topisomerase inhibitor, an anthracycline, a vinca alkaloid, or any combination thereof.

157. The method of claim 156, wherein the tyrosine kinase inhibitor comprises afatinib, erlotinib, dacomitinib, gefitinib, osimertinib, alectinib, brigatinib, ceritinib, crizotinib, lorlatinib, entrectinib, dabrafenib, trametinib, vemurafenib, larotrectinib, or any combination thereof.

158. The method of claim 156, wherein the anti-angiogenesis agent comprises an inhibitor of a vascular endothelial growth factor (VEGF), VEGF receptor (VEGFR), platelet-derived growth factor (PDGF), PDGF receptor (PDGFR), angiopoietin (Ang), tyrosine kinase with Ig-like and EGF-like domains (Tie) receptor, hepatocyte growth factor (HGF), tyrosine-protein kinase Met (c-MET), C-type lectin family 14 member A (CLEC14A), multimerin 2 (MMRN2), shock protein 70-1A (HSP70-1A), a epidermal growth factor (EGF), EGF receptor (EGFR), or any combination thereof.

159. The method of claim 156 or 158, wherein the anti-angiogenesis agent comprises bevacizumab, ramucirumab, aflibercept, tanibirumab, olaratumab, nesvacumab, AMG780, MEDI3617, vanucizumab, rilotumumab, ficlatuzumab, TAK-701, onartuzumab, emibetuzumab, or any combination thereof.

160. The method of claim 156, wherein the checkpoint inhibitor comprises a programmed death-1 (PD-1) pathway inhibitor, a cytotoxic T-lymphocyte-associated protein 4 (CTLA-4) inhibitor, a T cell immunoglobulin and ITIM domain (TIGIT) inhibitor, a T cell immunoglobulin and mucin-domain containing-3 (TIM-3) inhibitor, a TIM-1 inhibitor, a TIM-4 inhibitor, a B7-H3 inhibitor, a B7-H4 inhibitor, a B and T cell lymphocyte attenuator (BTLA) inhibitor, a V-domain Ig suppressor of T cell activation (VISTA) inhibitor, an indoleamine 2,3-dioxygenase (IDO) inhibitor, a nicotinamide adenine dinucleotide phosphate oxidase isoform 2 (NOX2) inhibitor, a killer-cell immunoglobulin-like receptor (KIR) inhibitor, an adenosine A2a receptor (A2aR) inhibitor, a transforming growth factor beta (TGF-β) inhibitor, a phosphoinositide 3-kinase (PI3K) inhibitor, a CD47 inhibitor, a CD48 inhibitor, a CD73 inhibitor, a CD113 inhibitor, a sialic acid-binding immunoglobulin-like lectin-7 (SIGLEC-7) inhibitor, a SIGLEC-9 inhibitor, a SIGLEC-15 inhibitor, a glucocorticoid-induced TNFR-related protein (GITR) inhibitor, a galectin-1 inhibitor, a galectin-9 inhibitor, a carcinoembryonic antigen-related cell adhesion molecule-1 (CEACAM-1) inhibitor, a G protein-coupled receptor 56 (GPR56) inhibitor, a glycoprotein A repetitions predominant (GARP) inhibitor, a 2B4 inhibitor, a programmed death-1 homolog (PD1H) inhibitor, a leukocyte-associated immunoglobulin-like receptor 1 (LAIR1) inhibitor, or any combination thereof.

161. The method of claim 160, wherein the PD-1 pathway inhibitor is an anti-PD-L1 antibody.

162. The method of claim 161, wherein the anti-PD-L1 antibody is a full-length antibody.

163. The method of claim 161 or 162, wherein the anti-PD-L1 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody.

164. The method of claim 163, wherein the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

165. The method of claim 161, wherein the anti-PD-L1 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

166. The method of any one of claims 161-165, wherein the anti-PD-L1 antibody is BMS-936559, atezolizumab, durvalumab, avelumab, STI-1014, CX-072, KN035, LY3300054, BGB-A333, ICO 36, CK-301, or comprises an antigen binding portion thereof.

167. The method of claim 160, wherein the PD-1 pathway inhibitor is BMS-986189.

168. The method of claim 156 or 160, wherein the checkpoint inhibitor comprises a CTLA-4 inhibitor.

169. The method of claim 168, wherein the CTLA-4 inhibitor is an anti-CTLA-4 antibody.

170. The method of claim 169, wherein the anti-CTLA-4 antibody is a full-length antibody.

171. The method of claim 169 or 170, wherein the anti-CTLA-4 antibody is a monoclonal, human, humanized, chimeric, or multispecific antibody.

172. The method of claim 171, wherein the multispecific antibody is a DART, a DVD-Ig, or bispecific antibody.

173. The method of claim 169, wherein the anti-CTLA-4 antibody is a $F(ab')_2$ fragment, a Fab' fragment, a Fab fragment, a Fv fragment, a scFv fragment, a dsFv fragment, a dAb fragment, or a single chain binding polypeptide.

174. The method of any one of claims 169-173, wherein the anti-CTLA-4 antibody is ipilimumab, tremelimumab, MK-1308, AGEN-1884, or comprises an antigen binding portion thereof.

175. The method of any one of claims 118-174, wherein the anti-LAG-3 antibody and the anti-PD-1 antibody are formulated for intravenous administration.

176. The method of any one of claims 160-175, wherein the checkpoint inhibitor is formulated for intravenous administration.

177. The method of any one of claims 118-176, the anti-LAG-3 antibody and the anti-PD-1 antibody are formulated separately.

178. The method of any one of claims 118-176, wherein the anti-LAG-3 antibody and the anti-PD-1 antibody are formulated together.

179. The method of any one of claims 118-177, wherein the anti-PD-1 antibody is administered before the anti-LAG-3 antibody.

180. The method of any one of claims 118-177, wherein the anti-LAG-3 antibody is administered before the anti-PD-1 antibody.

181. The method of any one of claims 118-178, wherein the LAG-3 antibody and the anti-PD-1 antibody are administered concurrently.

182. The method of any one of claims 118-181, wherein the anti-LAG-3 antibody and the anti-PD-1 antibody are administered about once every four weeks.

183. The method of claim 182, wherein the anti-LAG-3 antibody and the anti-PD-1 antibody are administered on Day 1 of every four-week cycle.

184. The method of claim 182 or 183, wherein the anti-LAG-3 antibody and the anti-PD-1 antibody are administered intravenously from a single intravenous bag for about 30 minutes.