

[0018] Certain examples of the present disclosure are based, at least in part, on the identification of anti-Siglec-7 antibodies that are capable of decreasing cell surface levels of Siglec-7 on human primary immune cells and Siglec-7-expressing cell lines and/or that are capable of inhibiting the binding of Siglec-7 ligands to Siglec-7 (*see, e.g., Examples 3-5*).

[0019] Accordingly, certain examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody decreases cellular levels of Siglec-7. In some examples, the anti-Siglec-7 antibody decreases cellular levels of Siglec-7 without inhibiting interaction between Siglec-7 and one or more Siglec-7 ligands. In some examples, the antibody further inhibits interaction between Siglec-7 and one or more Siglec-7 ligands.

[0019a] In one aspect, the present invention provides an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody decreases cell surface levels of Siglec-7 and does not inhibit interaction between Siglec-7 and one or more Siglec-7 ligands

[0020] Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody decreases cellular levels of Siglec-7 and inhibits interaction between Siglec-7 and one or more Siglec-7 ligands.

[0021] In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody decreases cell surface levels of Siglec-7, decreases intracellular levels of Siglec-7, decreases total levels of Siglec-7, or any combination thereof. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody induces Siglec-7 degradation, Siglec-7 cleavage, Siglec-7 internalization, Siglec-7 shedding, downregulation of Siglec-7 expression, or any combination thereof. In some examples that may be combined with any of the preceding examples, antibody decreases cellular levels of Siglec-7 *in vivo*. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody inhibits cell surface clustering of Siglec-7. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody inhibits one or more Siglec-7 activities. In some examples that may be combined with any of the preceding examples, the one or more Siglec-7 activities are selected from: (a) Siglec-7 binding to one or more Siglec-7 ligands, optionally wherein the one or more Siglec-7 ligands are selected from sialic acid-containing glycoproteins, sialic acid-containing glycolipids, and any combination thereof; (b) Siglec-7 binding to SHP1 or SHP2; (c) phosphorylation of Tyr-437, Tyr-460, or both, induced by one or more SRC family tyrosine kinases, optionally, wherein the one or more SRC family tyrosine kinases are selected from Syk, LCK, FYM, and ZAP-70; (d) modulated expression of one or more pro-inflammatory cytokines, optionally wherein the one or more pro-inflammatory cytokines are

selected from a group consisting IFN- α 4, IFN-beta, IL-1 β , IL-1alpha, TNF- α , IL-6, IL-8, CRP, IL-20 family members, LIF, IFN-gamma, OSM, CNTF, GM-CSF, IL-11, IL-12, IL-17, IL-18, IL-33, MCP-1, and MIP-1-beta; (e) modulated expression of one or more pro-inflammatory cytokines in one or more cells selected from macrophages, neutrophils, NK cells, dendritic cells, bone marrow-derived dendritic cells, monocytes, osteoclasts, T cells, T helper cells, cytotoxic T cells, granulocytes, and microglial cells; (f) modulated

tumor-associated neutrophils, tumor-associated NK cells, and regulatory T cells; (mm) promoting or rescuing functionality of one or more of immunosuppressor dendritic cells, immunosuppressor macrophages, immunosuppressor neutrophils, immunosuppressor NK cells, myeloid-derived suppressor cells, tumor-associated macrophages, tumor-associated neutrophils, tumor-associated NK cells, and regulatory T cells; (nn) increasing infiltration of one or more of immunosuppressor dendritic cells, immunosuppressor macrophages, immunosuppressor neutrophils, immunosuppressor NK cells, myeloid-derived suppressor cells, tumor-associated macrophages, tumor-associated neutrophils, tumor-associated NK cells, and regulatory T cells into tumors; (oo) increasing the number of tumor-promoting myeloid/granulocytic immune-suppressive cells in a tumor, in peripheral blood, or other lymphoid organ; (pp) enhancing tumor-promoting activity of myeloid-derived suppressor cells; (qq) increasing expression of tumor-promoting cytokines in a tumor or in peripheral blood, optionally wherein the tumor-promoting cytokines are TGF-beta or IL-10; (rr) increasing tumor infiltration of tumor-promoting FoxP3+ regulatory T lymphocytes; (ss) enhancing tumor-promoting activity of myeloid-derived suppressor cells (MDSC); (tt) decreasing activation of tumor-specific T lymphocytes with tumor killing potential; (uu) decreasing infiltration of tumor-specific NK cells with tumor killing potential; (vv) decreasing the tumor killing potential of NK cells; (ww) decreasing infiltration of tumor-specific B lymphocytes with potential to enhance immune response; (xx) decreasing infiltration of tumor-specific T lymphocytes with tumor killing potential; (yy) increasing tumor volume; (zz) increasing tumor growth rate; (aaa) increasing metastasis; (bbb) increasing rate of tumor recurrence; (ccc) decreasing efficacy of one or more immune-therapies that modulate anti-tumor T cell responses, optionally wherein the one or more immune-therapies are immune-therapies that target one or more target proteins selected from PD1/PDL1, CD40, OX40, ICOS, CD28, CD137/4-1BB, CD27, GITR, PD-L1, CTLA4, PD-L2, PD-1, B7-H3, B7-H4, HVEM, BTLA, KIR, GAL9, TIM3, A2AR, LAG, DR-5, TREM1, TREM2, CSF-1 receptor, and any combination thereof, or of one or more cancer vaccines; (ddd) inhibition of PLCγ/PKC/calcium mobilization; and (eee) inhibition of PI3K/Akt, Ras/MAPK signaling. In some examples that may be combined with any of the preceding examples, the one or more Siglec-7 activities are selected from: (a) Siglec-7 binding to one or more Siglec-7 ligands, optionally wherein the one or more Siglec-7 ligands are selected from the group consisting of sialic acid-containing glycoproteins, sialic acid-containing glycolipids, and any combination thereof; (b) decreasing proliferation of one or more cells selected from the group consisting of dendritic cells, bone marrow-derived dendritic cells, macrophages, neutrophils, NK cells, M1 macrophages, M1 neutrophils, M1 NK cells, activated M1 macrophages, activated M1 neutrophils, activated M1 NK cells, M2 macrophages, M2 neutrophils, M2 NK cells, monocytes, osteoclasts, T cells, T helper cells, cytotoxic T cells, granulocytes, neutrophils, microglia, M1 microglia, activated M1 microglia, and M2 microglia; (c) inhibiting

cells, dendritic cells, bone marrow-derived dendritic cells, neutrophils, T cells, T helper cells, or cytotoxic T cells; (i) promoting or rescuing functionality of one or more of immunosuppressor dendritic cells, immunosuppressor macrophages, immunosuppressor neutrophils, immunosuppressor NK cells, myeloid-derived suppressor cells, tumor-associated macrophages, tumor-associated neutrophils, tumor-associated NK cells, and regulatory T cells; (j) increasing infiltration of one or more of immunosuppressor dendritic cells, immunosuppressor macrophages, immunosuppressor neutrophils, immunosuppressor NK cells, myeloid-derived suppressor cells, tumor-associated macrophages, tumor-associated neutrophils, tumor-associated NK cells, and regulatory T cells into tumors; (k) increasing the number of tumor-promoting myeloid/granulocytic immune-suppressive cells in a tumor, in peripheral blood, or other lymphoid organ; (l) enhancing tumor-promoting activity of myeloid-derived suppressor cells (MDSC); (m) decreasing activation of tumor-specific T lymphocytes with tumor killing potential; (n) decreasing infiltration of tumor-specific T lymphocytes with tumor killing potential; (o) increasing tumor volume; (p) increasing tumor growth rate; and (q) decreasing efficacy of one or more immune-therapies that modulate anti-tumor T cell responses, optionally wherein the one or more immune-therapies are immune-therapies that target one or more target proteins selected from the group consisting of PD1/PDL1, CD40, OX40, ICOS, CD28, CD137/4-1BB, CD27, GITR, PD-L1, CTLA4, PD-L2, PD-1, B7-H3, B7-H4, HVEM, BTLA, KIR, GAL9, TIM3, A2AR, LAG, DR-5, TREM1, TREM2, CSF-1 receptor, and any combination thereof, or of one or more cancer vaccines. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody exhibits one or more activities selected from the group consisting of: (a) increasing the number of tumor infiltrating CD3⁺ T cells; (b) inhibiting Siglec-7 binding to one or more Siglec-7 ligands; (c) decreasing cellular levels of Siglec-7 in peripheral immune cells; (d) reducing the number of non-tumorigenic CD14⁺ myeloid cells, optionally wherein the non-tumorigenic CD14⁺ myeloid cells are tumor infiltrating cells or optionally wherein the non-tumorigenic CD14⁺ myeloid cells are present in blood; (e) reducing the number of non-tumorigenic CD14⁺ myeloid cells, optionally wherein the non-tumorigenic CD14⁺ myeloid cells are tumor infiltrating cells or optionally wherein the non-tumorigenic CD14⁺ myeloid cells are present in the tumor; (f) reducing PD-L1 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (g) reducing PD-L2 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (h) reducing CD11b levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (i) reducing B7-H3 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (j) reducing CD200R levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (k)

reducing CD163 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (l) reducing CD206 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (m) decreasing tumor growth rate of solid tumors; (n) reducing tumor volume; (o) increasing efficacy of one or more PD-1 inhibitors; (p) increasing efficacy of one or more checkpoint inhibitor therapies and/or immune-modulating therapies, optionally wherein the one or more checkpoint inhibitor therapies and/or immune-modulating therapies target one or more of CTLA4, the adenosine pathway, PD-L1, PD-L2, OX40, TIM3, LAG3, or any combination thereof; (q) inhibiting differentiation, survival, and/or one or more functions of non-tumorigenic myeloid-derived suppressor cells (MDSC); (r) inducing cell death of one or more myeloid-derived suppressor cells (MDSC); and (s) increasing proliferation of T cells in the presence of non-tumorigenic myeloid-derived suppressor cells (MDSC). In some examples that may be combined with any of the preceding examples, the one or more Siglec-7 ligands are selected from Siglec-7 ligands expressed on red blood cells, Siglec-7 ligands expressed on bacterial cells, Siglec-7 ligands expressed on apoptotic cells, Siglec-7 ligands expressed on nerve cells, Siglec-7 ligands expressed on glial cells, Siglec-7 ligands expressed on microglia, Siglec-7 ligands expressed on astrocytes, Siglec-7 ligands expressed on tumor cells, Siglec-7 ligands expressed on viruses, Siglec-7 ligands expressed on dendritic cells, Siglec-7 ligands bound to beta amyloid plaques, Siglec-7 ligands bound to Tau tangles, Siglec-7 ligands on disease-causing proteins, Siglec-7 ligands on disease-causing peptides, Siglec-7 ligands expressed on macrophages, Siglec-7 ligands expressed on neutrophils, Siglec-7 ligands expressed on monocytes, Siglec-7 ligands expressed on natural killer cells, Siglec-7 ligands expressed on T cells, Siglec-7 ligands expressed on T helper cells, Siglec-7 ligands expressed on cytotoxic T cells, Siglec-7 ligands expressed on B cells, Siglec-7 ligands expressed on tumor-imbedded immunosuppressor dendritic cells, Siglec-7 ligands expressed on tumor-imbedded immunosuppressor macrophages, Siglec-7 ligands expressed on tumor-imbedded immunosuppressor neutrophils, Siglec-7 ligands expressed on tumor-imbedded immunosuppressor NK cells, Siglec-7 ligands expressed on myeloid-derived suppressor cells, Siglec-7 ligands expressed on regulatory T cells, secreted mucins, sialic acid, sialic acid-containing glycolipids, sialic acid-containing glycoproteins, alpha-2,8-disialyl containing glycolipids, branched alpha-2,6-linked sialic acid-containing glycoproteins, terminal alpha-2,6-linked sialic acid-containing glycolipids, terminal alpha-2,3-linked sialic acid-containing glycoproteins, and disialogangliosides. In some examples that may be combined with any of the preceding examples, the cellular levels of Siglec-7 are measured on primary cells selected from dendritic cells, bone marrow-derived dendritic cells, monocytes, microglia, macrophages, neutrophils, and NK cells, or on cell lines, and wherein the cellular levels of Siglec-7 are measured utilizing an *in vitro* cell assay. In some examples that

may be combined with any of the preceding examples, the anti-Siglec-7 antibody does not reduce TREM2 expression. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody does not reduce cell surface levels of TREM2, does not reduce intracellular levels of TREM2, does not reduce total levels of TREM2, or any combination thereof. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody does not reduce cellular levels of TREM2 *in vivo*. In some examples that may be combined with any of the preceding examples, the cellular levels of TREM2 are measured on primary cells selected from dendritic cells, bone marrow-derived dendritic cells, monocytes, microglia, macrophages, neutrophils, and NK cells, or on cell lines, and wherein the cellular levels of TREM2 are measured utilizing an *in vitro* cell assay.

[0022] In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds a discontinuous Siglec-7 epitope. In some examples that may be combined with any of the preceding examples, the discontinuous Siglec-7 epitope comprises two or more peptides, three or more peptides, four or more peptides, five or more peptides, six or more peptides, seven or more peptide, eight or more peptides, nine or more peptides, or 10 or more peptides. In some examples that may be combined with any of the preceding examples, each of the peptides comprise five or more, six or more, seven or more, eight or more, nine or more, 10 or more, 11 or more, 12 or more, 13 or more 14 or more, 15 or more, 16 or more, 17 or more, 18 or more, 19 or more, or 20 or more amino acid residues of the amino acid sequence of SEQ ID NO: 1; or five or more, six or more, seven or more, eight or more, nine or more, 10 or more, 11 or more, 12 or more, 13 or more 14 or more, 15 or more, 16 or more, 17 or more, 18 or more, 19 or more, or 20 or more amino acid residues on a mammalian Siglec-7 protein corresponding to the amino acid sequence of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to a conformational epitope of Siglec-7. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 39-353, 39-149, 93-104, 95-105, 39-122, 123-149, 150-233, 240-336, 264-273, 295-306, 327-341, or 337-353 of SEQ ID NO: 1; or within amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 39-353, 39-149, 93-104, 95-105, 39-122, 123-149, 150-233, 240-336, 264-273, 295-306, 327-341, or 337-353 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues selected from the group consisting of: i. amino acid residues 60-69 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 of SEQ ID NO: 1; ii. amino acid residues 60-69 and 84-95 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 and 84-95 of SEQ ID NO: 1;

iii. amino acid residues 60-69 and 117-127 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 and 117-127 of SEQ ID NO: 1; iv. amino acid residues 68-78 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 68-78 of SEQ ID NO: 1; v. amino acid residues 84-95 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 84-95 of SEQ ID NO: 1; vi. amino acid residues 111-122 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 111-122 of SEQ ID NO: 1; vii. amino acid residues 111-122 and 282-291 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 111-122 and 282-291 of SEQ ID NO: 1; viii. amino acid residues 113-123 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 113-123 of SEQ ID NO: 1; ix. amino acid residues 113-125 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 113-125 of SEQ ID NO: 1; x. amino acid residues 117-127 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 117-127 of SEQ ID NO: 1; and xi. amino acid residues 282-291 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 282-291 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 60-69 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 60-69 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 60-69 and 84-95 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 60-69 and 84-95 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 60-69 and 117-127 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 60-69 and 117-127 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 68-78 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 68-78 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 84-95 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 84-95 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the

anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 111-122 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 111-122 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 111-122 and 282-291 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 111-122 and 282-291 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 113-123 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 113-123 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 113-125 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 113-125 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 117-127 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 117-127 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 282-291 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 282-29 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acid residues selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, I72, W74, N81, T103, K104, T107, and R124 of SEQ ID NO: 1, or one or more amino acid residues on a mammalian Siglec-7 protein corresponding to an amino acid residue selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, I72, W74, N81, T103, K104, T107, and R124 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody competes with one or more antibodies selected from 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1, 10G8, and any combination thereof for binding to Siglec-7. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody comprises a light chain variable domain and a heavy chain variable domain, wherein the light chain variable domain, the heavy chain variable domain, or both comprise at least one, two, three, four, five, or six HVRs selected from HVR-L1, HVR-L2, HVR-L3, HVR-H1, HVR-H2, and HVR-H3 of a monoclonal antibody selected from: 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1,

and 10G8. In some examples that may be combined with any of the preceding examples: (a) the HVR-L1 comprises an amino acid sequence selected from SEQ ID NOs: 7-19 and 476; (b) the HVR-L2 comprises an amino acid sequence selected from SEQ ID NOs: 20-32 and 477; (c) the HVR-L3 comprises an amino acid sequence selected from SEQ ID NOs: 33-45 and 478; (d) the HVR-H1 comprises an amino acid sequence selected from SEQ ID NOs: 46-58 and 479; (e) the HVR-H2 comprises an amino acid sequence selected from SEQ ID NOs: 59-71 and 480-482; or (f) the HVR-H3 comprises an amino acid sequence selected from SEQ ID NOs: 72-84 and 483. In some examples that may be combined with any of the preceding examples: (a) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 7, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 20, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 33, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 46, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 59, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 72; (b) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 8, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 21, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 34, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 47, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 60, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 73; (c) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 10, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 23, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 36, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 49, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 62, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 75; (d) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 11, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 24, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 37, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 50, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 63, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 76; (e) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 12, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 25, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 38, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 51, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 64, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 77; (f) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 13, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 26, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 39, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 52, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 65, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 78; (g) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 14, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 27, the HVR-

acid sequence of SEQ ID NO: 479, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 482, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 483; or (p) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 19, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 32, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 45, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 58, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 71, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 84. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 7, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 20, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 33, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 46, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 59, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 72. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 8, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 21, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 34, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 47, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 60, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 73. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 10, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 23, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 36, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 49, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 62, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 75. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 11, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 24, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 37, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 50, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 63, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 76. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 12, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 25, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 38, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 51, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 64, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 77. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 13, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 26, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 39, the HVR-H1 comprises the amino acid sequence of SEQ ID NO:

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57, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 70, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 83. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 476, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 477, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 478, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 57, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 70, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 83. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 18, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 31, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 44, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 479, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 482, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 483. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 19, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 32, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 45, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 58, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 71, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 84. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody comprises a light chain variable domain and a heavy chain variable domain, wherein the light chain variable domain comprises: (a) an HVR-L1 comprising an amino acid sequence selected from SEQ ID NOs: 7-19 and 476, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 7-19 and 476; (b) an HVR-L2 comprising an amino acid sequence selected from SEQ ID NOs: 20-32 and 477, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 20-32 and 477; and (c) an HVR-L3 comprising an amino acid sequence selected from SEQ ID NOs: 33-45 and 478, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 33-45 and 478; and wherein the heavy chain variable domain comprises: (a) an HVR-H1 comprising an amino acid sequence selected from SEQ ID NOs: 46-58 and 479, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 46-58 and 479; (b) an HVR-H2 comprising an amino acid sequence selected from SEQ ID NOs: 59-71 and 480-482, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 59-71 and 480-482; and (c) an HVR-H3 comprising an amino acid sequence selected from SEQ ID NOs: 72-84 and 483, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 72-84 and 483. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7

antibody comprises a light chain variable domain comprising an amino acid sequence selected from SEQ ID NOs: 189-318, 449-461, and 484-489; and/or a heavy chain variable domain comprising an amino acid sequence selected from SEQ ID NOs: 319-448, 462-474, and 490-496. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody comprises a light chain variable domain of a monoclonal antibody selected from: 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1, and 10G8; and/or a heavy chain variable domain of a monoclonal antibody selected from: 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1, and 10G8.

[0022a] In another aspect, the present invention provides an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody binds to one or more amino acid residues selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, T103, K104, and T107 of SEQ ID NO: 1, or one or more amino acid residues on a mammalian Siglec-7 protein corresponding to an amino acid residue selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, T103, K104, and T107 of SEQ ID NO: 1.

[0023] Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 39-353, 39-149, 93-104, 95-105, 39-122, 123-149, 150-233, 240-336, 264-273, 295-306, 327-341, or 337-353 of SEQ ID NO: 1; or within amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 39-353, 39-149, 93-104, 95-105, 39-122, 123-149, 150-233, 240-336, 264-273, 295-306, 327-341, or 337-353 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues selected from the group consisting of: i. amino acid residues 60-69 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 of SEQ ID NO: 1; ii. amino acid residues 60-69 and 84-95 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 and 84-95 of SEQ ID NO: 1; iii. amino acid residues 60-69 and 117-127 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 and 117-127 of SEQ ID NO: 1; iv. amino acid residues 68-78 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 68-78 of SEQ ID NO: 1; v. amino acid residues 84-95 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 84-95 of SEQ ID NO: 1; vi. amino acid residues 111-122 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 111-122 of SEQ ID NO: 1; vii. amino acid residues 111-122 and 282-291 of SEQ ID NO: 1, or amino acid residues on a

mammalian Siglec-7 protein corresponding to amino acid residues 111-122 and 282-291 of SEQ ID NO: 1; viii. amino acid residues 113-123 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 113-123 of SEQ ID NO: 1; ix. amino acid residues 113-125 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 113-125 of SEQ ID NO: 1; x. amino acid residues 117-127 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 117-127 of SEQ ID

NO: 1; and xi. amino acid residues 282-291 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 282-291 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 60-69 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 60-69 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 60-69 and 84-95 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 60-69 and 84-95 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 60-69 and 117-127 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 60-69 and 117-127 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 68-78 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 68-78 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 84-95 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 84-95 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 111-122 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 111-122 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 111-122 and 282-291 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 111-122 and 282-291 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 113-123 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 113-123 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 113-125 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 113-125 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the

anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 117-127 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 117-127 of SEQ ID NO: 1. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues 282-291 of human Siglec-7 (SEQ ID NO: 1), or within amino acid residues on a Siglec-7 homolog or ortholog corresponding to amino acid residues 282-29 of SEQ ID NO: 1. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody binds to one or more amino acid residues selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, I72, W74, N81, T103, K104, T107, and R124 of SEQ ID NO: 1, or one or more amino acid residues on a mammalian Siglec-7 protein corresponding to an amino acid residue selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, I72, W74, N81, T103, K104, T107, and R124 of SEQ ID NO: 1.

[0024] Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain and a heavy chain variable domain, wherein the light chain variable domain, the heavy chain variable domain, or both comprise at least one, two, three, four, five, or six HVRs selected from HVR-L1, HVR-L2, HVR-L3, HVR-H1, HVR-H2, and HVR-H3 of a monoclonal antibody selected from: 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1, and 10G8.

[0024a] In yet another aspect, the present invention provides an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody competes with one or more antibodies selected from the group consisting of 4D7, 7A3, 7E11, 10B5, 10G8, and any combination thereof for binding to Siglec-7.

[0024b] In yet another aspect, the present invention provides an isolated monoclonal anti-Siglec-7 antibody which binds essentially the same Siglec-7 epitope as a monoclonal antibody selected from the group consisting of: 4D7, 7A3, 7E11, 10B5, and 10G8.

[0025] In some examples that may be combined with any of the preceding examples: (a) the HVR-L1 comprises an amino acid sequence selected from SEQ ID NOs: 7-19 and 476; (b) the HVR-L2 comprises an amino acid sequence selected from SEQ ID NOs: 20-32 and 477; (c) the HVR-L3 comprises an amino acid sequence selected from SEQ ID NOs: 33-45 and 478; (d) the HVR-H1 comprises an amino acid sequence selected from SEQ ID NOs: 46-58 and 479; (e) the HVR-H2 comprises an amino acid sequence selected from SEQ ID NOs: 59-71 and 480-482; or (f) the HVR-H3 comprises an amino acid sequence selected from SEQ ID NOs: 72-84 and 483. In some examples that may be combined with any of the preceding

examples: (a) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 7, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 20, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 33, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 46, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 59, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 72; (b) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 8, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 21, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 34, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 47, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 60, and the HVR-H3 comprises the

SEQ ID NO: 15, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 28, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 41, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 54, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 67, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 80; (l) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 16, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 29, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 42, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 55, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 68, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 81; (m) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 17, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 30, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 43, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 56, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 69, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 82; (n) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 18, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 31, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 44, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 57, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 70, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 83; (o) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 476, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 477, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 478, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 57, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 70, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 83; (p) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 18, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 31, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 44, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 479, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 482, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 483; or (q) the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 19, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 32, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 45, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 58, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 71, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 84. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 7, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 20, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 33, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 46, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 59, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 72. In some examples that may be combined with any

with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 18, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 31, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 44, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 479, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 482, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 483. In some examples that may be combined with any of the preceding examples, the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 19, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 32, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 45, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 58, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 71, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 84. In some examples, the light chain variable domain comprises: (a) an HVR-L1 comprising an amino acid sequence selected from SEQ ID NOs: 7-19 and 476, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 7-19 and 476; (b) an HVR-L2 comprising an amino acid sequence selected from SEQ ID NOs: 20-32 and 477, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 20-32 and 477; and (c) an HVR-L3 comprising an amino acid sequence selected from SEQ ID NOs: 33-45 and 478, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 33-45 and 478; and wherein the heavy chain variable domain comprises: (a) an HVR-H1 comprising an amino acid sequence selected from SEQ ID NOs: 46-58 and 479, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 46-58 and 479; (b) an HVR-H2 comprising an amino acid sequence selected from SEQ ID NOs: 59-71 and 480-482, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 59-71 and 480-482; and (c) an HVR-H3 comprising an amino acid sequence selected from SEQ ID NOs: 72-84 and 483, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 72-84 and 483.

[0026] Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, an HVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, an HVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 7, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 20, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 33, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 46, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 59, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 72. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, an HVR-L2, and an HVR-L3, and a heavy chain

variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 8, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 21, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 34, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 47, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 60, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 73. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the amino acid sequence of SEQ ID NO: 9, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 22, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 35, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 48, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 61, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 74. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 10, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 23, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 36, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 49, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 62, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 75. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 11, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 24, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 37, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 50, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 63, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 76. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 12, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 25, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 38, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 51, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 64, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 77. Other examples

of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 13, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 26, the HVR-L3comprises the amino acid sequence of SEQ ID NO: 39, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 52, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 65, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 78. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 14, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 27, the HVR-L3comprises the amino acid sequence of SEQ ID NO: 40, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 53, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 66, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 79. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 14, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 27, the HVR-L3comprises the amino acid sequence of SEQ ID NO: 40, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 53, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 480, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 74. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 14, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 27, the HVR-L3comprises the amino acid sequence of SEQ ID NO: 40, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 53, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 481 and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 79. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 15, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 28, the HVR-L3comprises the amino acid

sequence of SEQ ID NO: 41, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 54, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 67, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 80. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 16, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 29, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 42, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 55, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 68, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 81. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 17, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 30, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 43, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 56, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 69, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 82. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 18, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 31, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 44, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 57, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 70, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 83. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 476, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 477, the HVR-L3 comprises the amino acid sequence of SEQ ID NO: 478, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 57, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 70, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 83. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable

domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 18, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 31, the HVR-L3comprises the amino acid sequence of SEQ ID NO: 44, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 479, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 482, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 483. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an HVR-L1, anHVR-L2, and an HVR-L3, and a heavy chain variable domain comprising an HVR-H1, anHVR-H2, and an HVR-H3, wherein the HVR-L1 comprises the amino acid sequence of SEQ ID NO: 19, the HVR-L2 comprises the amino acid sequence of SEQ ID NO: 32, the HVR-L3comprises the amino acid sequence of SEQ ID NO: 45, the HVR-H1 comprises the amino acid sequence of SEQ ID NO: 58, the HVR-H2 comprises the amino acid sequence of SEQ ID NO: 71, and the HVR-H3 comprises the amino acid sequence of SEQ ID NO: 84. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain comprising an amino acid sequence selected from SEQ ID NOs: 189-318, 449-461, and 484-489; and/or a heavy chain variable domain comprising an amino acid sequence selected from SEQ ID NOs: 319-448, 462-474, and 490-496. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain of a monoclonal antibody selected from: 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1, and 10G8; and/or a heavy chain variable domain of a monoclonal antibody selected from: 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1, and 10G8. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody competes with one or more antibodies selected from 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1, 10G8, and any combination thereof for binding to Siglec-7. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody which binds essentially the same Siglec-7 epitope as a monoclonal antibody selected from: 1A12, 1E8, 2G1, 2G4, 3E11, 4A1, 4D7, 4E3, 4E3H1, 4E3H2, 7A3, 7E11, 7F12, 10B5, 10B5L1, 10B5H1, and 10G8. Other examples of the present disclosure relate to an isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody comprises a light chain variable domain and a heavy chain variable domain, wherein the light chain variable domain comprises: (a) an HVR-L1 comprising an amino acid sequence selected from SEQ ID NOs: 7-19 and 476, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 7-19 and 476; (b) an HVR-L2 comprising an amino acid sequence selected from SEQ ID NOs: 20-32 and 477, or an amino acid sequence with at least about

90% homology to an amino acid sequence selected from SEQ ID NOs: 20-32 and 477; and (c) an HVR-L3 comprising an amino acid sequence selected from SEQ ID NOs: 33-45 and 478, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 33-45 and 478; and/or wherein the heavy chain variable domain comprises: (a) an HVR-H1 comprising an amino acid sequence selected from SEQ ID NOs: 46-58 and 479, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 46-58 and 479; (b) an HVR-H2 comprising an amino acid sequence selected from SEQ ID NOs: 59-71 and 480-482, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 59-71 and 480-482; and (c) an HVR-H3 comprising an amino acid sequence selected from SEQ ID NOs: 72-84 and 483, or an amino acid sequence with at least about 90% homology to an amino acid sequence selected from SEQ ID NOs: 72-84 and 483.

[0027] In some examples that may be combined with any of the preceding examples, the antibody is of the IgG class the IgM class, or the IgA class. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody has an IgG1, IgG2, IgG3, or IgG4 isotype. In some examples that may be combined with any of the preceding examples, the antibody binds an inhibitory Fc receptor. In some examples that may be combined with any of the preceding examples, the inhibitory Fc receptor is inhibitory Fc-gamma receptor IIB (FcγIIB). In some examples that may be combined with any of the preceding examples: (a) the anti-Siglec-7 antibody has a human or mouse IgG1 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from: N297A, D265A, D270A, L234A, L235A, G237A, P238D, L328E, E233D, G237D, H268D, P271G, A330R, C226S, C229S, E233P, L234V, L234F, L235E, P331S, S267E, L328F, A330L, M252Y, S254T, T256E, N297Q, P238S, P238A, A327Q, A327G, P329A, K322A, T394D, and any combination thereof, wherein the numbering of the residues is according to EU or Kabat numbering, or comprises an amino acid deletion in the Fc region at a position corresponding to glycine 236; (b) the anti-Siglec-7 antibody has an IgG1 isotype and comprises an IgG2 isotype heavy chain constant domain 1(CH1) and hinge region, optionally wherein the IgG2 isotype CH1 and hinge region comprises the amino acid sequence of ASTKGPSVFP LAPCSRSTSE STAALGCLVK DYFPEPTVS WNSGALTSGVHTFPAVLQSS GLYSLSSVVT VPSSNFGTQT YTCNVDHKPS NTKVDKTVERKCCVECPCP (SEQ ID NO: 475), and optionally wherein the antibody Fc region comprises a S267E amino acid substitution, a L328F amino acid substitution, or both, and/or a N297A or N297Q amino acid substitution, wherein the numbering of the residues is according to EU numbering; (c) the anti-Siglec-7 antibody has an IgG2 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from: P238S, V234A, G237A, H268A, H268Q, V309L, A330S, P331S, C214S, C232S, C233S, S267E, L328F, M252Y, S254T, T256E,

H268E, N297A, N297Q, A330L, and any combination thereof, wherein the numbering of the residues is according to EU or Kabat numbering; (d) the anti-Siglec-7 antibody has a human or mouse IgG4 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from: L235A, G237A, S228P, L236E, S267E, E318A, L328F, M252Y, S254T, T256E, E233P, F234V, L234A/F234A, S228P, S241P, L248E, T394D, N297A, N297Q, L235E, and any combination thereof, wherein the numbering of the residues is according to EU or Kabat numbering; or (e) the anti-Siglec-7 antibody has a hybrid IgG2/4 isotype, and optionally wherein the antibody comprises an amino acid sequence comprising amino acids 118 to 260 of human IgG2 and amino acids 261 to 447 of human IgG4, wherein the numbering of the residues is according to EU or, Kabat numbering. In some examples that may be combined with any of the preceding examples: (a) the anti-Siglec-7 antibody has a human or mouse IgG1 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from: N297A, N297Q, D270A, D265A, L234A, L235A, C226S, C229S, P238S, E233P, L234V, P238A, A327Q, A327G, P329A, K322A, L234F, L235E, P331S, T394D, A330L, M252Y, S254T, T256E, and any combination thereof, wherein the numbering of the residues is according to EU or Kabat numbering; (b) the anti-Siglec-7 antibody has an IgG2 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from: P238S, V234A, G237A, H268A, H268Q, H268E, V309L, N297A, N297Q, A330S, P331S, C232S, C233S, M252Y, S254T, T256E, and any combination thereof, wherein the numbering of the residues is according to EU or Kabat numbering; or (c) the anti-Siglec-7 antibody has an IgG4 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from: E233P, F234V, L234A/F234A, L235A, G237A, E318A, S228P, L236E, S241P, L248E, T394D, M252Y, S254T, T256E, N297A, N297Q, and any combination thereof, wherein the numbering of the residues is according to EU or Kabat numbering. In some examples that may be combined with any of the preceding examples: (a) the Fc region further comprises one or more additional amino acid substitutions at a position selected from A330L, L234F; L235E, P331S, and any combination thereof, wherein the numbering of the residues is according to EU or Kabat numbering; (b) the Fc region further comprises one or more additional amino acid substitutions at a position selected from M252Y, S254T, T256E, and any combination thereof, wherein the numbering of the residues is according to EU or Kabat numbering; or (c) the Fc region further comprises a S228P amino acid substitution according to EU or Kabat numbering. In some examples that may be combined with any of the preceding examples, the antibody has an IgG4 isotype. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody comprises an S228P amino acid substitution at residue position 228, an F234A amino acid substitution at residue position 234, and an L235A amino acid substitution at residue position 235, wherein the numbering of the residue position is according to EU numbering.

In some examples that may be combined with any of the preceding examples, the antibody has an IgG4 isotype and comprises an S228P amino acid substitution at residue position 228, an F234A amino acid substitution at residue position 234, and an L235A amino acid substitution at residue position 235, wherein the numbering of the residue position is according to EU numbering. In some examples that may be combined with any of the preceding examples, the Siglec-7 protein is a mammalian protein or a human protein. In some examples that may be combined with any of the preceding examples, the Siglec-7 protein is a wild-type protein. In some examples that may be combined with any of the preceding examples, the Siglec-7 protein is a naturally occurring variant. In some examples that may be combined with any of the preceding examples, the Siglec-7 protein is expressed on one or more cells selected from human dendritic cells, human macrophages, human neutrophils, human NK cells, human monocytes, human osteoclasts, human T cells, human T helper cell, human cytotoxic T cells, human granulocytes, and human microglia. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds specifically to a mammalian Siglec-7 protein, human Siglec-7 protein, or both. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds Siglec-7 in a pH dependent manner. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds Siglec-7 at a pH that ranges from 5.5 to 8.0. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody dissociates from Siglec-7 at a pH of less than 5.0. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is an antibody fragment that binds to an epitope comprising amino acid residues on human Siglec-7 or a mammalian Siglec-7 protein. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is an antibody fragment that binds to one or more human proteins selected from human Siglec-7, a naturally occurring variant of human Siglec-7, and a disease variant of human Siglec-7. In some examples that may be combined with any of the preceding examples, the antibody fragment is cross-linked to a second antibody fragment that binds to one or more human proteins selected from human Siglec-7, a naturally occurring variant of human Siglec-7, and a disease variant of human Siglec-7. In some examples that may be combined with any of the preceding examples, the fragment is an Fab, Fab', Fab'-SH, F(ab')₂, Fv, or scFv fragment. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is a murine antibody. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is a humanized antibody, a bispecific antibody, a monoclonal antibody, a multivalent antibody, a conjugated antibody, or a chimeric antibody. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is a bispecific antibody

recognizing a first antigen and a second antigen. In some examples that may be combined with any of the preceding examples, the first antigen is Siglec-7 and the second antigen is: (a) an antigen facilitating transport across the blood-brain-barrier; (b) an antigen facilitating transport across the blood-brain-barrier selected from transferrin receptor (TR), insulin receptor (HIR), insulin-like growth factor receptor (IGFR), low-density lipoprotein receptor related proteins 1 and 2 (LPR-1 and 2), diphtheria toxin receptor, CRM197, a llama single domain antibody, TMEM 30(A), a protein transduction domain, TAT, Syn-B, penetratin, a poly-arginine peptide, an angiopep peptide, and ANG1005; (c) a disease-causing agent selected from disease-causing peptides or proteins or, disease-causing nucleic acids, wherein the disease-causing nucleic acids are antisense GGCCCC (G2C4) repeat-expansion RNA, the disease-causing proteins are selected from amyloid beta, oligomeric amyloid beta, amyloid beta plaques, amyloid precursor protein or fragments thereof, Tau, IAPP, alpha-synuclein, TDP-43, FUS protein, C9orf72 (chromosome 9 open reading frame 72), c9RAN protein, prion protein, PrPSc, huntingtin, calcitonin, superoxide dismutase, ataxin, ataxin 1, ataxin 2, ataxin 3, ataxin 7, ataxin 8, ataxin 10, Lewy body, atrial natriuretic factor, islet amyloid polypeptide, insulin, apolipoprotein AI, serum amyloid A, medin, prolactin, transthyretin, lysozyme, beta 2 microglobulin, gelsolin, keratoepithelin, cystatin, immunoglobulin light chain AL, S-IBM protein, Repeat-associated non-ATG (RAN) translation products, DiPeptide repeat (DPR) peptides, glycine-alanine (GA) repeat peptides, glycine-proline (GP) repeat peptides, glycine-arginine (GR) repeat peptides, proline-alanine (PA) repeat peptides, ubiquitin, and proline-arginine (PR) repeat peptides; (d) ligands and/or proteins expressed on immune cells, wherein the ligands and/or proteins selected from PD1/PDL1, CD40, OX40, ICOS, CD28, CD137/4-1BB, CD27, GITR, PD-L1, CTLA4, PD-L2, PD-1, B7-H3, B7-H4, HVEM, BTLA, KIR, GAL9, TIM3, A2AR, LAG, and phosphatidylserine; and (e) a protein, lipid, polysaccharide, or glycolipid expressed on one or more tumor cells. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is a conjugated antibody. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is conjugated to a detectable marker, a toxin, or a therapeutic agent. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is conjugated to a toxin selected from ricin, ricin A-chain, doxorubicin, daunorubicin, a maytansinoid, taxol, ethidium bromide, mitomycin, etoposide, tenoposide, vincristine, vinblastine, colchicine, dihydroxy anthracin dione, actinomycin, diphtheria toxin, *Pseudomonas* exotoxin (PE) A, PE40, abrin, abrin A chain, modeccin A chain, alpha-sarcin, gelonin, mitogellin, retstrictocin, phenomycin, enomycin, curicin, crotin, calicheamicin, *Saponaria officinalis* inhibitor, glucocorticoid, auristatin, auromycin, yttrium, bismuth, combrestatin, duocarmycins, dolastatin, cc1065, and a cisplatin. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody is used in combination with one or

more antibodies that specifically bind a disease-causing agent selected from disease-causing peptides, disease-causing proteins, amyloid beta, oligomeric amyloid beta, amyloid beta plaques, amyloid precursor protein or fragments thereof, Tau, IAPP, alpha-synuclein, TDP-43, FUS protein, C9orf72 (chromosome 9 open reading frame 72), prion protein, PrPSc, huntingtin, calcitonin, superoxide dismutase, ataxin, ataxin 1, ataxin 2, ataxin 3, ataxin 7, ataxin 8, ataxin 10, Lewy body, atrial natriuretic factor, islet amyloid polypeptide, insulin, apolipoprotein AI, serum amyloid A, medin, prolactin, transthyretin, lysozyme, beta 2 microglobulin, gelsolin, keratoepithelin, cystatin, immunoglobulin light chain AL, S-IBM protein, Repeat-associated non-ATG (RAN) translation products, DiPeptide repeat (DPR) peptides, glycine-alanine (GA) repeat peptides, glycine-proline (GP) repeat peptides, glycine-arginine (GR) repeat peptides, proline-alanine (PA) repeat peptides, ubiquitin, and proline-arginine (PR) repeat peptides, and any combination thereof; or with one or more antibodies that bind an immunomodulatory protein selected from: PD1/PDL1, CD40, OX40, ICOS, CD28, CD137/4-1BB, CD27, GITR, PD-L1, CTLA4, PD-L2, PD-1, B7-H3, B7-H4, HVEM, BTLA, KIR, GAL9, TIM3, A2AR, LAG, TREM1, TREM2, CD33, Siglec-5, Siglec-9, Siglec-11, phosphatidylserine, disease-causing nucleic acids, antisense GGCCCC (G2C4) repeat-expansion RNA, and any combination thereof. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody has a dissociation constant (K_D) for human Siglec-7 and mammalian Siglec-7 that ranges from about 10 nM to about 10 pM, or less than 10 pM. In some examples, the dissociation constant (K_D) is determined at a temperature of approximately 25°C. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody has a dissociation constant (K_D) for human Siglec-7 that ranges from about 9.5 nM to about 17 pM, or less than 17 pM. In some examples, the dissociation constant (K_D) is determined at a temperature of approximately 25°C. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to human dendritic cells with an EC_{50} that ranges from 2 nM to 100 pM. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to human dendritic cells with an EC_{50} that ranges from 1.4 nM to 300 pM. In some examples, the EC_{50} for binding to human dendritic cells is determined at a temperature of approximately 4°C. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody decreases cellular levels of Siglec-7 with an EC_{50} that ranges from 500 pM to 18 pM. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody decreases cellular levels of Siglec-7 with an EC_{50} that ranges from 350 pM to 33 pM. In some examples, the EC_{50} is determined at a temperature of approximately 37°C.

[0028] Other examples of the present disclosure relate to an isolated nucleic acid comprising a nucleic acid sequence encoding the anti-Siglec-7 antibody of any of the preceding examples.

Other examples of the present disclosure relate to a vector comprising the nucleic acid of any of the preceding examples. Other examples of the present disclosure relate to an isolated host cell comprising the vector of any of the preceding examples. Other examples of the present disclosure relate to a method of producing an anti-Siglec-7 antibody, comprising culturing the host cell of any of the preceding examples so that the anti-Siglec-7 antibody is produced. In some examples, the method further comprises recovering the anti-Siglec-7 antibody produced by the host cell. Other examples of the present disclosure relate to an isolated anti-Siglec-7 antibody produced by the method of any of the preceding examples. Other examples of the present disclosure relate to a pharmaceutical composition comprising the anti-Siglec-7 antibody of any of the preceding examples, and a pharmaceutically acceptable carrier.

[0028a] In yet another aspect, the present invention provides an isolated nucleic acid comprising a nucleic acid sequence encoding the anti-Siglec-7 antibody described herein. In yet another aspect, the present invention provides a vector comprising the nucleic acid described herein. In yet another aspect, the present invention provides isolated host cell comprising the vector described herein. In yet another aspect, the present invention provides a method of producing an anti-Siglec-7 antibody, comprising culturing the host cell described herein so that the anti-Siglec-7 antibody is produced. In yet another aspect, the present invention provides a pharmaceutical composition comprising the anti-Siglec-7 antibody described herein, and a pharmaceutically acceptable carrier. In yet another aspect, the present invention provides use of an agent that decreases cell surface levels of Siglec-7, and does not inhibit interaction between Siglec-7 and one or more Siglec-7 ligands in the manufacture of a medicament for preventing, reducing risk, or treating a disease, disorder, or injury selected from the group consisting of dementia, frontotemporal dementia, Alzheimer's disease, vascular dementia, mixed dementia, taupathy disease, infections, and cancer.

[0029] Other examples of the present disclosure relate to a method of preventing, reducing risk, or treating a disease, disorder, or injury selected from dementia, frontotemporal dementia, Alzheimer's disease, vascular dementia, mixed dementia, Creutzfeldt-Jakob disease, normal pressure hydrocephalus, amyotrophic lateral sclerosis, Huntington's disease, taupathy disease, Nasu-Hakola disease, stroke, acute trauma, chronic trauma, lupus, acute and chronic colitis, rheumatoid arthritis, wound healing, Crohn's disease, inflammatory bowel disease, ulcerative colitis, obesity, malaria, essential tremor, central nervous system lupus, Behcet's disease, Parkinson's disease, dementia with Lewy bodies, multiple system atrophy, Shy-Drager syndrome, progressive supranuclear palsy, cortical basal ganglionic degeneration, acute disseminated encephalomyelitis, granulomatous disorders, sarcoidosis, diseases of aging, seizures, spinal cord injury, traumatic brain injury, age related macular degeneration, glaucoma, retinitis pigmentosa, retinal degeneration,

respiratory tract infection, sepsis, eye infection, systemic infection, lupus, arthritis, multiple sclerosis, low bone density, osteoporosis, osteogenesis, osteopetrotic disease, Paget's disease of bone, and cancer, bladder cancer, brain cancer, breast cancer, colon cancer, rectal cancer, endometrial cancer, kidney cancer, renal cell cancer, renal pelvis cancer, leukemia, lung cancer, melanoma, non-Hodgkin's lymphoma, pancreatic cancer, prostate cancer, ovarian cancer, fibrosarcoma, acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL), chronic myeloid leukemia (CML), multiple myeloma, polycythemia vera, essential thrombocytosis, primary or idiopathic myelofibrosis, primary or idiopathic myelosclerosis, myeloid-derived tumors, tumors that express Siglec-7, tumors that express one or more Siglec-7 ligands, thyroid cancer, infections, CNS herpes, parasitic infections, Trypanosome infection, Cruzi infection, *Pseudomonas aeruginosa* infection, *Leishmania donovani* infection, group B *Streptococcus* infection, *Campylobacter jejuni* infection, *Neisseria meningitidis* infection, type I HIV, and Haemophilus influenza, comprising administering to an individual in need thereof a therapeutically effective amount of an agent that decreases cellular levels of Siglec-7, inhibits interaction between Siglec-7 and one or more Siglec-7

ligands, or both. In some examples, the cancer is selected from the group consisting of bladder cancer, brain cancer, breast cancer, colon cancer, rectal cancer, endometrial cancer, kidney cancer, renal cell cancer, renal pelvis cancer, leukemia, lung cancer, melanoma, non-Hodgkin's lymphoma, pancreatic cancer, prostate cancer, ovarian cancer, fibrosarcoma, acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL), chronic myeloid leukemia (CML), and multiple myeloma. Other examples of the present disclosure relate to an agent that decreases cellular levels of Siglec-7, inhibits interaction between Siglec-7 and one or more Siglec-7 ligands, or both for use in preventing, reducing risk, or treating a disease, disorder, or injury selected from dementia, frontotemporal dementia, Alzheimer's disease, vascular dementia, mixed dementia, Creutzfeldt-Jakob disease, normal pressure hydrocephalus, amyotrophic lateral sclerosis, Huntington's disease, taupathy disease, Nasu-Hakola disease, stroke, acute trauma, chronic trauma, lupus, acute and chronic colitis, rheumatoid arthritis, wound healing, Crohn's disease, inflammatory bowel disease, ulcerative colitis, obesity, malaria, essential tremor, central nervous system lupus, Behcet's disease, Parkinson's disease, dementia with Lewy bodies, multiple system atrophy, Shy-Drager syndrome, progressive supranuclear palsy, cortical basal ganglionic degeneration, acute disseminated encephalomyelitis, granulomatous disorders, sarcoidosis, diseases of aging, seizures, spinal cord injury, traumatic brain injury, age related macular degeneration, glaucoma, retinitis pigmentosa, retinal degeneration, respiratory tract infection, sepsis, eye infection, systemic infection, lupus, arthritis, multiple sclerosis, low bone density, osteoporosis, osteogenesis, osteopetrotic disease, Paget's disease of bone, and cancer, bladder cancer, brain cancer, breast cancer, colon cancer, rectal cancer, endometrial cancer, kidney cancer, renal cell cancer, renal pelvis cancer, leukemia, lung cancer, melanoma, non-Hodgkin's lymphoma, pancreatic cancer, prostate cancer, ovarian cancer, fibrosarcoma, acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL), chronic myeloid leukemia (CML), multiple myeloma, polycythemia vera, essential thrombocytosis, primary or idiopathic myelofibrosis, primary or idiopathic myelosclerosis, myeloid-derived tumors, tumors that express Siglec-7, tumors that express one or more Siglec-7 ligands, thyroid cancer, infections, CNS herpes, parasitic infections, Trypanosome infection, *Cruzi* infection, *Pseudomonas aeruginosa* infection, *Leishmania donovani* infection, group B *Streptococcus* infection, *Campylobacter jejuni* infection, *Neisseria meningitidis* infection, type I HIV, and Haemophilus influenza. Other examples of the present disclosure relate to use of an agent that decreases cellular levels of Siglec-7, inhibits interaction between Siglec-7 and one or more Siglec-7 ligands, or both in the manufacture of a medicament for preventing, reducing risk, or treating a disease, disorder, or injury selected from dementia, frontotemporal dementia, Alzheimer's disease, vascular dementia, mixed dementia, Creutzfeldt-Jakob disease, normal pressure hydrocephalus, amyotrophic lateral sclerosis, Huntington's disease, taupathy disease, Nasu-Hakola disease, stroke,

acute trauma, chronic trauma, lupus, acute and chronic colitis, rheumatoid arthritis, wound healing, Crohn's disease, inflammatory bowel disease, ulcerative colitis, obesity, malaria, essential tremor, central nervous system lupus, Behcet's disease, Parkinson's disease, dementia with Lewy bodies, multiple system atrophy, Shy-Drager syndrome, progressive supranuclear palsy, cortical basal ganglionic degeneration, acute disseminated encephalomyelitis, granulomatous disorders, sarcoidosis, diseases of aging, seizures, spinal cord injury, traumatic brain injury, age related macular degeneration, glaucoma, retinitis pigmentosa, retinal degeneration, respiratory tract infection, sepsis, eye infection, systemic infection, lupus, arthritis, multiple sclerosis, low bone density, osteoporosis, osteogenesis, osteopetrotic disease, Paget's disease of bone, and cancer, bladder cancer, brain cancer, breast cancer, colon cancer, rectal cancer, endometrial cancer, kidney cancer, renal cell cancer, renal pelvis cancer, leukemia, lung cancer, melanoma, non-Hodgkin's lymphoma, pancreatic cancer, prostate cancer, ovarian cancer, fibrosarcoma, acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL), chronic myeloid leukemia (CML), multiple myeloma, polycythemia vera, essential thrombocytosis, primary or idiopathic myelofibrosis, primary or idiopathic myeloid sclerosis, myeloid-derived tumors, tumors that express Siglec-7, tumors that express one or more Siglec-7 ligands, thyroid cancer, infections, CNS herpes, parasitic infections, Trypanosome infection, Cruzi infection, *Pseudomonas aeruginosa* infection, *Leishmania donovani* infection, group B *Streptococcus* infection, *Campylobacter jejuni* infection, *Neisseria meningitidis* infection, type I HIV, and Haemophilus influenza. In some examples, the agent is selected from an antibody, a soluble Siglec-7 receptor, a Siglec-7-Fc fusion protein, a Siglec-7 immunoadhesin, an antisense molecule, an siRNA, a small molecule inhibitor, a protein, and a peptide. In some examples, the agent is an isolated anti-Siglec-7 antibody. In some examples, the anti-Siglec-7 antibody is the anti-Siglec-7 antibody of any of the preceding examples. In some examples, the one or more immune cells are selected from dendritic cells, macrophages, neutrophils, NK cells, microglia, T cells, T helper cells, cytotoxic T cells, and any combination thereof. Other examples of the present disclosure relate to a method of preventing, reducing risk, or treating a disease, disorder, or injury selected from dementia, frontotemporal dementia, Alzheimer's disease, vascular dementia, mixed dementia, taupathy disease, infections, and cancer, comprising administering to an individual in need thereof a therapeutically effective amount of an agent that decreases cellular levels of Siglec-7, inhibits interaction between Siglec-7 and one or more Siglec-7 ligands, or both. Other examples of the present disclosure relate to an agent that decreases cellular levels of Siglec-7, inhibits interaction between Siglec-7 and one or more Siglec-7 ligands, or both for use in preventing, reducing risk, or treating a disease, disorder, or injury selected from dementia, frontotemporal dementia, Alzheimer's disease, vascular dementia, mixed dementia, taupathy disease, infections, and cancer. Other examples of the present disclosure relate to use of an agent that decreases cellular levels of Siglec-7, inhibits

interaction between Siglec-7 and one or more Siglec-7 ligands, or both in the manufacture of a medicament for preventing, reducing risk, or treating a disease, disorder, or injury selected from dementia, frontotemporal dementia, Alzheimer's disease, vascular dementia, mixed dementia, tauopathy disease, infections, and cancer.

[0030] In some examples that may be combined with any of the preceding examples, the disease, disorder, or injury is cancer, and wherein the agent inhibits one or more Siglec-7 activities selected from: (a) promoting proliferation, maturation, migration, differentiation, and/or functionality of one or more of immunosuppressor dendritic cells, immunosuppressor macrophages, immunosuppressor neutrophils, immunosuppressor NK cells, myeloid derived suppressor cells, tumor-associated macrophages, tumor-associated suppressor neutrophils, tumor-associated suppressor NK cells, and regulatory T cells; (b) enhancing infiltration of one or more of immunosuppressor dendritic cells, immunosuppressor macrophages, immunosuppressor neutrophils, immunosuppressor NK cells, myeloid derived suppressor cells, tumor-associated macrophages, tumor-associated suppressor neutrophils, tumor-associated suppressor NK cells, and regulatory T cells into tumors; (c) increasing number of tumor-promoting myeloid/granulocytic immune-suppressive cells in a tumor, in peripheral blood, or other lymphoid organ; (d) enhancing tumor-promoting activity of myeloid-derived suppressor cells (MDSC); (e) increasing expression of tumor-promoting cytokines in a tumor or in peripheral blood, optionally wherein the tumor-promoting cytokines are TGF-beta or IL-10; (f) increasing tumor infiltration of tumor-promoting FoxP3+ regulatory T lymphocytes; (g) decreasing activation of tumor-specific T lymphocytes with tumor killing potential; (h) decreasing infiltration of tumor-specific T lymphocytes with tumor killing potential; (i) decreasing infiltration of tumor-specific NK cells with tumor killing potential; (j) decreasing the tumor killing potential of NK cells; (k) decreasing infiltration of tumor-specific B lymphocytes with potential to enhance immune response; (l) increasing tumor volume; (m) increasing tumor growth rate; (n) increasing metastasis; (o) increasing rate of tumor recurrence; (p) decreasing efficacy of one or more immune-therapies that modulate anti-tumor T cell responses, optionally wherein the one or more immune-therapies are immune-therapies that target one or more target proteins selected from PD1/PDL1, CTLA4, CD40, OX40, ICOS, CD28, CD137/4-1BB, CD27, GITR, PD-L1, CTLA4, PD-L2, PD-1, B7-H3, B7-H4, HVEM, BTLA, KIR, GAL9, TIM3, A2AR, LAG, DR-5, and any combination thereof, or one or more cancer vaccines; (q) inhibition of PLC γ /PKC/calcium mobilization; and (r) inhibition of PI3K/Akt, Ras/MAPK signaling. In some examples that may be combined with any of the preceding examples, the cancer expresses Siglec-7 or one or more Siglec-7 ligands. In some examples that may be combined with any of the preceding examples, the cancer is selected from bladder cancer, brain cancer, breast cancer, colon cancer, rectal cancer, endometrial cancer, kidney cancer, renal cell cancer, renal pelvis cancer, leukemia, lung cancer, melanoma, non-Hodgkin's lymphoma,

pancreatic cancer, prostate cancer, ovarian cancer, fibrosarcoma, acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL), chronic myeloid leukemia (CML), and multiple myeloma. In some examples that may be combined with any of the preceding examples, the agent exhibits one or more activities selected from the group consisting of: (a) increasing the number of tumor infiltrating CD3⁺ T cells; (b) inhibiting Siglec-7 binding to one or more Siglec-7 ligands; (c) decreasing cellular levels of Siglec-7 in peripheral immune cells; (d) reducing the number of non-tumorigenic CD14⁺ myeloid cells, optionally wherein the non-tumorigenic CD14⁺ myeloid cells are tumor infiltrating cells or optionally wherein the non-tumorigenic CD14⁺ myeloid cells are present in blood; (e) reducing the number of non-tumorigenic CD14⁺ myeloid cells, optionally wherein the non-tumorigenic CD14⁺ myeloid cells are tumor infiltrating cells or optionally wherein the non-tumorigenic CD14⁺ myeloid cells are present in the tumor; (f) reducing PD-L1 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (g) reducing PD-L2 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (h) reducing CD11b levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (i) reducing B7-H3 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (j) reducing CD200R levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (k) reducing CD163 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (l) reducing CD206 levels in one or more cells, optionally wherein the one or more cells are non-tumorigenic myeloid-derived suppressor cells (MDSC); (m) decreasing tumor growth rate of solid tumors; (n) reducing tumor volume; (o) increasing efficacy of one or more PD-1 inhibitors; (p) increasing efficacy of one or more checkpoint inhibitor therapies and/or immune-modulating therapies, optionally wherein the one or more checkpoint inhibitor therapies and/or immune-modulating therapies target one or more of CTL4, the adenosine pathway, PD-L1, PD-L2, OX40, TIM3, LAG3, or any combination thereof; (q) inhibiting differentiation, survival, and/or one or more functions of non-tumorigenic myeloid-derived suppressor cells (MDSC); (r) inducing cell death of one or more myeloid-derived suppressor cells (MDSC); and (s) increasing proliferation of T cells in the presence of non-tumorigenic myeloid-derived suppressor cells (MDSC).

[0031] Other examples of the present disclosure relate to a method of inducing or promoting the survival, maturation, functionality, migration, or proliferation of one or more immune cells in an individual in need thereof, comprising administering to the individual a therapeutically effective amount of an agent that decreases cellular levels of Siglec-7, inhibits interaction between Siglec-7 and one or more Siglec-7 ligands, or both. Other examples of the present disclosure relate to an agent

that decreases cellular levels of Siglec-7, inhibits interaction between Siglec-7 and one or more Siglec-7 ligands, or both for use in inducing or promoting the survival, maturation, functionality, migration, or proliferation of one or more immune cells in an individual in need thereof. Other examples of the present disclosure relate to use of an agent that decreases cellular levels of Siglec-7, inhibits interaction between Siglec-7 and one or more Siglec-7 ligands, or both in the manufacture of a medicament for inducing or promoting the survival, maturation, functionality, migration, or proliferation of one or more immune cells in an individual in need thereof. In some examples, the agent is selected from an antibody, a soluble Siglec-7 receptor, a Siglec-7-Fc fusion protein, a Siglec-7 immunoadhesin, an antisense molecule, an siRNA, a small molecule inhibitor, a protein, and a peptide. In some examples, the agent is an isolated anti-Siglec-7 antibody. In some examples, the anti-Siglec-7 antibody is the anti-Siglec-7 antibody of any of the preceding examples. In some examples, the one or more immune cells are selected from dendritic cells, macrophages, neutrophils, NK cells, microglia, T cells, T helper cells, cytotoxic T cells, and any combination thereof.

[0032] Other examples of the present disclosure relate to a method of decreasing the activity, functionality, or survival of regulatory T cells, tumor-imbedded immunosuppressor dendritic cells, tumor-imbedded immunosuppressor macrophages, myeloid-derived suppressor cells, tumor-associated macrophages, acute myeloid leukemia (AML) cells, chronic lymphocytic leukemia (CLL) cell, or chronic myeloid leukemia (CML) cells in an individual in need thereof, comprising administering to the individual a therapeutically effective amount of an agent that binds or interacts with Siglec-7. Other examples of the present disclosure relate to use of an agent that binds or interacts with Siglec-7 for use in decreasing the activity, functionality, or survival of regulatory T cells, tumor-imbedded immunosuppressor dendritic cells, tumor-imbedded immunosuppressor macrophages, myeloid-derived suppressor cells, tumor-associated macrophages, acute myeloid leukemia (AML) cells, chronic lymphocytic leukemia (CLL) cell, or chronic myeloid leukemia (CML) cells in an individual in need thereof. Other examples of the present disclosure relate to use of an agent that binds or interacts with Siglec-7 in the manufacture of a medicament for decreasing the activity, functionality, or survival of regulatory T cells, tumor-imbedded immunosuppressor dendritic cells, tumor-imbedded immunosuppressor macrophages, myeloid-derived suppressor cells, tumor-associated macrophages, acute myeloid leukemia (AML) cells, chronic lymphocytic leukemia (CLL) cell, or chronic myeloid leukemia (CML) cells in an individual in need thereof. In some examples, the agent is an isolated anti-Siglec-7 antibody or anti-Siglec-7 antibody conjugate. In some examples, the anti-Siglec-7 antibody is the anti-Siglec-7 antibody of any of the preceding examples.

[0033] Other examples of the present disclosure relate to a method of decreasing cellular levels of Siglec-7 on one or more cells in an individual in need thereof, comprising administering to the individual a therapeutically effective amount of an isolated anti-Siglec-7 antibody. Other examples of the present disclosure relate to use of an isolated anti-Siglec-7 antibody for use in decreasing cellular levels of Siglec-7 on one or more cells in an individual in need thereof. Other examples of the present disclosure relate to use of an isolated anti-Siglec-7 antibody in the manufacture of a medicament for decreasing cellular levels of Siglec-7 on one or more cells in an individual in need thereof. In some examples, the anti-Siglec-7 antibody decreases cellular levels of Siglec-7 *in vivo*. In some examples, the anti-Siglec-7 antibody decreases cellular levels of Siglec-7 with an EC₅₀ that ranges from 500 pM to 18 pM. In some examples, the anti-Siglec-7 antibody decreases cellular levels of Siglec-7 with an EC₅₀ that ranges from 350 pM to 33 pM. In some examples, the EC₅₀ is determined at a temperature of approximately 37°C. In some examples, the anti-Siglec-7 antibody has a dissociation constant (K_D) for human Siglec-7 that ranges from about 10 nM to 10 pM, or less than 10 pM. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody has a dissociation constant (K_D) for human Siglec-7 that ranges from about 9.5 nM to about 17 pM, or less than 17 pM. In some examples, the dissociation constant (K_D) is determined at a temperature of approximately 25°C. In some examples, the anti-Siglec-7 antibody binds to human dendritic cells with an EC₅₀ that ranges from 2 nM to 100 pM. In some examples that may be combined with any of the preceding examples, the anti-Siglec-7 antibody binds to human dendritic cells with an EC₅₀ that ranges from 1.4 nM to 300 pM. In some examples, the an EC₅₀ for binding to human dendritic cells is determined at a temperature of approximately 4°C. In some examples, the anti-Siglec-7 antibody is the anti-Siglec-7 antibody of any of the preceding examples.

[0034] In some examples that may be combined with any of the preceding examples, the method further comprising administering to the individual at least one antibody that specifically binds to an inhibitory checkpoint molecule, and/or one or more standard or investigational anti-cancer therapies. In some examples that may be combined with any of the preceding examples, the at least one antibody that specifically binds to an inhibitory checkpoint molecule is administered in combination with the anti-Siglec-7 antibody. In some examples that may be combined with any of the preceding examples, the at least one antibody that specifically binds to an inhibitory checkpoint molecule is selected from an anti-PD-L1 antibody, an anti-CTLA4 antibody, an anti-PD-L2 antibody, an anti-PD-1 antibody, an anti-B7-H3 antibody, an anti-B7-H4 antibody, and anti-HVEM antibody, an anti- B- and T-lymphocyte attenuator (BTLA) antibody, an anti-Killer inhibitory receptor (KIR) antibody, an anti-GAL9 antibody, an anti-TIM3 antibody, an anti-A2AR antibody, an anti-LAG-3 antibody, an anti-phosphatidylserine antibody, an anti-CD27 antibody, an anti-TNFα

antibody,

an anti-CD33 antibody, an anti-Siglec-5 antibody, an anti-Siglec-9 antibody, an anti-Siglec-11 antibody, an antagonistic anti-TREM1 antibody, an antagonistic anti-TREM2 antibody, and any combination thereof. In some examples that may be combined with any of the preceding examples, the one or more standard or investigational anti-cancer therapies are selected from radiotherapy, cytotoxic chemotherapy, targeted therapy, imatinib therapy, trastuzumab therapy, etanercept therapy, adoptive cell transfer (ACT) therapy, chimeric antigen receptor T cell transfer (CAR-T) therapy, vaccine therapy, and cytokine therapy. In some examples that may be combined with any of the preceding examples, the method further comprising administering to the individual at least one antibody that specifically binds to an inhibitory cytokine. In some examples that may be combined with any of the preceding examples, the at least one antibody that specifically binds to an inhibitory cytokine is administered in combination with the anti-Siglec-7 antibody. In some examples that may be combined with any of the preceding examples, the at least one antibody that specifically binds to an inhibitory cytokine is selected from an anti-CCL2 antibody, an anti-CSF-1 antibody, an anti-IL-2 antibody, and any combination thereof. In some examples that may be combined with any of the preceding examples, the method further comprising administering to the individual at least one agonistic antibody that specifically binds to a stimulatory checkpoint protein. In some examples that may be combined with any of the preceding examples, the at least one agonistic antibody that specifically binds to a stimulatory checkpoint protein is administered in combination with the anti-Siglec-7 antibody. In some examples that may be combined with any of the preceding examples, the at least one agonistic antibody that specifically binds to a stimulatory checkpoint protein is selected from an agonist anti-CD40 antibody, an agonist anti-OX40 antibody, an agonist anti-ICOS antibody, an agonist anti-CD28 antibody, an agonistic anti-TREM1 antibody, an agonistic anti-TREM2 antibody, an agonist anti-CD137/4-1BB antibody, an agonist anti-CD27 antibody, an agonist anti-glucocorticoid-induced TNFR-related protein GITR antibody, and any combination thereof. In some examples that may be combined with any of the preceding examples, the method further comprising administering to the individual at least one stimulatory cytokine. In some examples that may be combined with any of the preceding examples, the at least one stimulatory cytokine is administered in combination with the anti-Siglec-7 antibody. In some examples that may be combined with any of the preceding examples, the at least one stimulatory cytokine is selected from IFN- α 4, IFN- β , IL-1 β , TNF- α , IL-6, IL-8, CRP, IL-20 family members, LIF, IFN- γ , OSM, CNTF, GM-CSF, IL-11, IL-12, IL-17, IL-18, IL-23, CXCL10, IL-33, MCP-1, MIP-1- β , and any combination thereof.

[0035] Other examples of the present disclosure relate to a method of assessing responsiveness of an individual to an agent that binds or interacts with Siglec-7, the method comprising: a) measuring the expression levels of CD45⁺ and CD14⁺ on non-tumorigenic myeloid cells in a blood sample obtained from the individual prior to administering to the individual an agent that binds or interacts with Siglec-7; b) administering to the individual a therapeutically effective amount of the agent; and c) measuring the expression levels of CD45⁺ and CD14⁺ on non-tumorigenic myeloid cells in a blood sample obtained from the individual after administration of the agent. In some examples, a reduction in the levels of CD45⁺ and CD14⁺ on non-tumorigenic myeloid cells after administration of the agent that binds or interacts with Siglec-7 indicates the individual is responsive to the agent. In some examples, the method further comprises administering one or more additional therapeutically effective amounts of the agent. In some examples, the agent is selected from the group consisting of an antibody, a soluble Siglec-7 receptor, a Siglec-7-Fc fusion protein, a Siglec-7 immunoadhesin, an antisense molecule, an siRNA, a small molecule inhibitor, a protein, and peptide. In some examples, the agent is an isolated anti-Siglec-7 antibody or anti-Siglec-7 antibody-conjugate. In some examples, the anti-Siglec-7 antibody is any of the anti-Siglec-7 antibodies disclosed herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0036] **FIG. 1A** depicts an amino acid sequence alignment between human Siglec-7 (SEQ ID NO: 1), chimpanzee Siglec-7 (SEQ ID NO: 2), pygmy chimpanzee Siglec-7 (SEQ ID NO: 3), orangutan Siglec-7 (SEQ ID NO: 4), gorilla Siglec-7 (SEQ ID NO: 5), and gibbon Siglec-7 (SEQ ID NO: 6). An asterisk ("*") indicates positions which have a single, fully conserved residue; A colon (":") indicates conservation between groups of strongly similar properties - scoring > 0.5 in the Gonnet PAM 250 matrix; and a period (".") indicates conservation between groups of weakly similar properties - scoring ≤ 0.5 in the Gonnet PAM 250 matrix. **FIG. 1B** depicts the 3D structure of Siglec-7. Amino acid residues 19-150 of the Siglec-7 amino acid sequence of SEQ ID NO: 1 are depicted in a cartoon representation. Also depicted is a cartoon rendering of an epitope for antibody 4A1. The binding region ¹¹³ARMSDAGRYFFRM¹²⁵ (SEQ ID NO: 1) is listed in the figure. The protein surface of Siglec-7 is shown as mesh.

[0037] **FIG. 1C** depicts a cartoon rendering of binding sites of a discontinuous epitope for antibodies 2G4, 3E11, 10B5, 2G1, and 7F12. The discontinuous binding regions ⁶⁰PVHGYWFRAG⁶⁹ (SEQ ID NO: 1) and ¹¹⁷DAGRYFFRMEK¹²⁷ (SEQ ID NO: 1) are listed in the figure. **FIG. 1D** depicts a cartoon rendering of binding sites of a discontinuous epitope for antibody 10G8 antibodies 2G4, 3E11, 10B5, 2G1, and 7F12. The discontinuous binding regions ⁶⁰PVHGYWFRAG⁶⁹ (SEQ ID NO: 1) and ⁸⁴AWAVQEETDRF⁹⁵ (SEQ ID NO: 1) are listed in the figure. **FIG. 1E** depicts a cartoon rendering of an epitope for antibody 4A1. The binding region ¹¹³ARMSDAGRYFFRM¹²⁵

CLAIMS

What is claimed is:

1. An isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody decreases cell surface levels of Siglec-7 and does not inhibit interaction between Siglec-7 and one or more Siglec-7 ligands.
2. The anti-Siglec-7 antibody of claim 1, wherein the antibody decreases cellular levels of Siglec-7 *in vivo*.
3. The anti-Siglec-7 antibody of claim 1 or claim 2, wherein the anti-Siglec-7 antibody inhibits one or more Siglec-7 activities.
4. The anti-Siglec-7 antibody of any one of claims 1-3, wherein the one or more Siglec-7 ligands are selected from the group consisting of Siglec-7 ligands expressed on red blood cells, Siglec-7 ligands expressed on bacterial cells, Siglec-7 ligands expressed on apoptotic cells, Siglec-7 ligands expressed on nerve cells, Siglec-7 ligands expressed on glial cells, Siglec-7 ligands expressed on microglia, Siglec-7 ligands expressed on astrocytes, Siglec-7 ligands expressed on tumor cells, Siglec-7 ligands expressed on viruses, Siglec-7 ligands expressed on dendritic cells, Siglec-7 ligands bound to beta amyloid plaques, Siglec-7 ligands bound to Tau tangles, Siglec-7 ligands on disease-causing proteins, Siglec-7 ligands on disease-causing peptides, Siglec-7 ligands expressed on macrophages, Siglec-7 ligands expressed on neutrophils, Siglec-7 ligands expressed on monocytes, Siglec-7 ligands expressed on natural killer cells, Siglec-7 ligands expressed on T cells, Siglec-7 ligands expressed on T helper cells, Siglec-7 ligands expressed on cytotoxic T cells, Siglec-7 ligands expressed on B cells, Siglec-7 ligands expressed on tumor-imbedded immunosuppressor dendritic cells, Siglec-7 ligands expressed on tumor-imbedded immunosuppressor macrophages, Siglec-7 ligands expressed on tumor-imbedded immunosuppressor neutrophils, Siglec-7 ligands expressed on tumor-imbedded immunosuppressor NK cells, Siglec-7 ligands expressed on myeloid-derived suppressor cells, Siglec-7 ligands expressed on regulatory T cells, secreted mucins, sialic acid, sialic acid-containing glycolipids, sialic acid-containing glycoproteins, alpha-2,8-disialyl containing glycolipids, branched alpha-2,6-linked sialic acid-containing glycoproteins, terminal alpha-2,6-linked sialic acid-containing glycolipids, terminal alpha-2,3-linked sialic acid-containing glycoproteins, and disialogangliosides.
5. The anti-Siglec-7 antibody of any one of claims 1-4, wherein the cell surface levels of Siglec-7 are measured on primary cells selected from the group consisting of dendritic cells, bone marrow-derived dendritic cells, monocytes, microglia, macrophages, neutrophils, and NK cells, or on cell lines, and wherein the cell surface levels of Siglec-7 are measured utilizing an *in vitro* cell assay.

6. The anti-Siglec-7 antibody of any one of claims 1-5, wherein the anti-Siglec-7 antibody does not reduce TREM2 expression.
7. The anti-Siglec-7 antibody of any one of claims 1-6, wherein the anti-Siglec-7 antibody binds to one or more amino acids within amino acid residues selected from the group consisting of:
 - i. amino acid residues 60-69 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 of SEQ ID NO: 1;
 - ii. amino acid residues 60-69 and 84-95 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 and 84-95 of SEQ ID NO: 1;
 - iii. amino acid residues 60-69 and 117-127 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 60-69 and 117-127 of SEQ ID NO: 1;
 - iv. amino acid residues 68-78 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 68-78 of SEQ ID NO: 1;
 - v. amino acid residues 84-95 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 84-95 of SEQ ID NO: 1;
 - vi. amino acid residues 113-123 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 113-123 of SEQ ID NO: 1;
 - vii. amino acid residues 117-127 of SEQ ID NO: 1, or amino acid residues on a mammalian Siglec-7 protein corresponding to amino acid residues 117-127 of SEQ ID NO: 1;
8. The anti-Siglec-7 antibody of any one of claims 1-7, wherein the anti-Siglec-7 antibody binds to one or more amino acid residues selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, T103, K104, and T107 of SEQ ID NO: 1, or one or more amino acid residues on a mammalian Siglec-7 protein corresponding to an amino acid residue selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, T103, K104, and T107 of SEQ ID NO: 1.
9. The anti-Siglec-7 antibody of any one of claims 1-8, wherein the anti-Siglec-7 antibody competes with one or more antibodies selected from the group consisting of 4D7, 7A3, 7E11, 10B5, 10G8, and any combination thereof for binding to Siglec-7.
10. The anti-Siglec-7 antibody of any one of claims 1-9, wherein the anti-Siglec-7 antibody comprises a light chain variable domain and a heavy chain variable domain, wherein:
 - (a) the light chain variable domain comprises an HVR-L1 comprising the amino acid sequence of SEQ ID NO: 13 or an amino acid sequence with at least about 90%

- homology to SEQ ID NO: 13, an HVR-L2 comprising the amino acid sequence of SEQ ID NO: 26 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 26, an HVR-L3 comprising the amino acid sequence of SEQ ID NO: 39 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 39, and the heavy chain variable domain comprises an HVR-H1 comprising the amino acid sequence of SEQ ID NO: 52 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 52, an HVR-H2 comprising the amino acid sequence of SEQ ID NO: 65 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 65, and an HVR-H3 comprising the amino acid sequence of SEQ ID NO: 78 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 78;
- (b) the light chain variable domain comprises an HVR-L1 comprising the amino acid sequence of SEQ ID NO: 15 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 15, an HVR-L2 comprising the amino acid sequence of SEQ ID NO: 28 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 28, an HVR-L3 comprising the amino acid sequence of SEQ ID NO: 41 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 41, and the heavy chain variable domain comprises an HVR-H1 comprising the amino acid sequence of SEQ ID NO: 54 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 54, an HVR-H2 comprising the amino acid sequence of SEQ ID NO: 67 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 67, and an HVR-H3 comprising the amino acid sequence of SEQ ID NO: 80 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 80;
- (c) the light chain variable domain comprises an HVR-L1 comprising the amino acid sequence of SEQ ID NO: 16 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 16, an HVR-L2 comprising the amino acid sequence of SEQ ID NO: 29 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 29, an HVR-L3 comprising the amino acid sequence of SEQ ID NO: 42 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 42, and the heavy chain variable domain comprises an HVR-H1 comprising the amino acid sequence of SEQ ID NO: 55 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 55, an HVR-H2 comprising the amino acid sequence of SEQ ID NO: 68 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 68, and an HVR-H3 comprising the amino acid sequence of SEQ ID NO: 81 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 81;

- (d) the light chain variable domain comprises an HVR-L1 comprising the amino acid sequence of SEQ ID NO: 18 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 18, an HVR-L2 comprising the amino acid sequence of SEQ ID NO: 31 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 31, an HVR-L3 comprising the amino acid sequence of SEQ ID NO: 44 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 44, an HVR-H1 comprising the amino acid sequence of SEQ ID NO: 57 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 57, an HVR-H2 comprising the amino acid sequence of SEQ ID NO: 70 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 70, and an HVR-H3 comprising the amino acid sequence of SEQ ID NO: 83 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 83; or
- (e) the light chain variable domain comprises an HVR-L1 comprising the amino acid sequence of SEQ ID NO: 19 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 19, an HVR-L2 comprising the amino acid sequence of SEQ ID NO: 32 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 32, an HVR-L3 comprising the amino acid sequence of SEQ ID NO: 45 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 45, and the heavy chain variable domain comprises an HVR-H1 comprising the amino acid sequence of SEQ ID NO: 58 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 58, an HVR-H2 comprising the amino acid sequence of SEQ ID NO: 71 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 71, and an HVR-H3 comprising the amino acid sequence of SEQ ID NO: 84 or an amino acid sequence with at least about 90% homology to SEQ ID NO: 84.

11. An isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody binds to one or more amino acid residues selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, T103, K104, and T107 of SEQ ID NO: 1, or one or more amino acid residues on a mammalian Siglec-7 protein corresponding to an amino acid residue selected from the group consisting of M30, Q31, V44, R45, S47, F48, Y50, T103, K104, and T107 of SEQ ID NO: 1.

12. An isolated monoclonal anti-Siglec-7 antibody, wherein the anti-Siglec-7 antibody competes with one or more antibodies selected from the group consisting of 4D7, 7A3, 7E11, 10B5, 10G8, and any combination thereof for binding to Siglec-7.

13. An isolated monoclonal anti-Siglec-7 antibody which binds essentially the same Siglec-7 epitope as a monoclonal antibody selected from the group consisting of: 4D7, 7A3, 7E11, 10B5, and 10G8.
14. The anti-Siglec-7 antibody of any one of the preceding claims, wherein the antibody is of the IgG class, the IgM class, or the IgA class.
15. The anti-Siglec-7 antibody of claim 14, wherein the anti-Siglec-7 antibody has an IgG1, IgG2, IgG3, or IgG4 isotype.
16. The anti-Siglec-7 antibody of claim 15, wherein:
 - (a) the anti-Siglec-7 antibody has a human or mouse IgG1 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from the group consisting of: N297A, D265A, D270A, L234A, L235A, G237A, P238D, L328E, E233D, G237D, H268D, P271G, A330R, C226S, C229S, E233P, L234V, L234F, L235E, P331S, S267E, L328F, A330L, M252Y, S254T, T256E, N297Q, P238S, P238A, A327Q, A327G, P329A, K322A, T394D, and any combination thereof, wherein the numbering of the residues is according to EU numbering, or comprises an amino acid deletion in the Fc region at a position corresponding to glycine 236;
 - (b) the anti-Siglec-7 antibody has an IgG1 isotype and comprises an IgG2 isotype heavy chain constant domain 1(CH1) and hinge region, optionally wherein the IgG2 isotype CH1 and hinge region comprises the amino acid sequence of ASTKGPSVFP LAPCSRSTSE STAALGCLVK DYFPEPVTVS WNSGALTSGVHTFPAVLQSS GLYSLSSVVT VPSSNFGTQT YTCNVDPKPS NTKVDKTVRKCCVECPPCP (SEQ ID NO: 475), and optionally wherein the antibody Fc region comprises a S267E amino acid substitution, a L328F amino acid substitution, or both, and/or a N297A or N297Q amino acid substitution, wherein the numbering of the residues is according to EU numbering;
 - (c) the anti-Siglec-7 antibody has an IgG2 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from the group consisting of: P238S, V234A, G237A, H268A, H268Q, V309L, A330S, P331S, C214S, C232S, C233S, S267E, L328F, M252Y, S254T, T256E, H268E, N297A, N297Q, A330L, and any combination thereof, wherein the numbering of the residues is according to EU numbering;
 - (d) the anti-Siglec-7 antibody has a human or mouse IgG4 isotype and comprises one or more amino acid substitutions in the Fc region at a residue position selected from the

group consisting of: L235A, G237A, S228P, L236E, S267E, E318A, L328F, M252Y, S254T, T256E, E233P, F234V, L234A/F234A, S228P, S241P, L248E, T394D, N297A, N297Q, L235E, and any combination thereof, wherein the numbering of the residues is according to EU numbering; or

- (e) the anti-Siglec-7 antibody has a hybrid IgG2/4 isotype, and optionally wherein the antibody comprises an amino acid sequence comprising amino acids 118 to 260 of human IgG2 and amino acids 261 to 447 of human IgG4, wherein the numbering of the residues is according to EU or, Kabat numbering.

17. The anti-Siglec-7 antibody of any one of the preceding claims, wherein the Siglec-7 protein is a mammalian protein or a human protein.

18. The anti-Siglec-7 antibody of any one of the preceding claims, wherein the anti-Siglec-7 antibody binds Siglec-7 in a pH dependent manner.

19. The anti-Siglec-7 antibody of any one of the preceding claims, wherein the anti-Siglec-7 antibody is an antibody fragment that binds to an epitope comprising amino acid residues on human Siglec-7 or a mammalian Siglec-7 protein.

20. The anti-Siglec-7 antibody of claim 19, wherein the fragment is an Fab, Fab', Fab'-SH, F(ab')₂, Fv, or scFv fragment.

21. The anti-Siglec-7 antibody of any one of the preceding claims, wherein the anti-Siglec-7 antibody is a murine antibody, a humanized antibody, a bispecific antibody, a monoclonal antibody, a multivalent antibody, a conjugated antibody, or a chimeric antibody.

22. The anti-Siglec-7 antibody of any one of the preceding claims, wherein the anti-Siglec-7 antibody has a dissociation constant (K_D) for human Siglec-7 that ranges from about 9.5 nM to about 17 pM, or less than 17 pM, wherein the K_D is determined at a temperature of approximately 25°C.

23. The anti-Siglec-7 antibody of any one of the preceding claims, wherein the anti-Siglec-7 antibody binds to human dendritic cells with an EC_{50} that ranges from 2 nM to 100 pM, wherein the EC_{50} is determined at a temperature of approximately 4°C.

24. The anti-Siglec-7 antibody of any one of the preceding claims, wherein the anti-Siglec-7 antibody decreases cellular levels of Siglec-7 with an EC_{50} that ranges from 500 pM to 18 pM, wherein the EC_{50} is determined at a temperature of approximately 37°C.

25. An isolated nucleic acid comprising a nucleic acid sequence encoding the anti-Siglec-7 antibody of any one of the preceding claims.

26. A vector comprising the nucleic acid of claim 25.
27. An isolated host cell comprising the vector of claim 26.
28. A method of producing an anti-Siglec-7 antibody, comprising culturing the host cell of claim 27 so that the anti-Siglec-7 antibody is produced.
29. A pharmaceutical composition comprising the anti-Siglec-7 antibody of any one of claims 1-24, and a pharmaceutically acceptable carrier.
30. Use of an agent that decreases cell surface levels of Siglec-7, and does not inhibit interaction between Siglec-7 and one or more Siglec-7 ligands in the manufacture of a medicament for preventing, reducing risk, or treating a disease, disorder, or injury selected from the group consisting of dementia, frontotemporal dementia, Alzheimer's disease, vascular dementia, mixed dementia, tauopathy disease, infections, and cancer.