Claims

~~1. An antibody molecule that binds to human CD73, comprising:~~

~~(i) a heavy chain variable region (VH) comprising a heavy chain complementarity determining region 1 (VHCDR1) amino acid sequence of SEQ ID NO: 88, a VHCDR2 amino acid sequence of SEQ ID NO: 89, and a VHCDR3 amino acid sequence of SEQ ID NO: 37; and~~

~~(ii) a light chain variable region (VL) comprising a light chain complementarity determining region 1 (VLCDR1) amino acid sequence of SEQ ID NO: 48, a VLCDR2 amino acid sequence of SEQ ID NO: 49, and a VLCDR3 amino acid sequence of SEQ ID NO: 50.~~

~~2~~1. ~~The~~ An antibody molecule that binds to human CD73~~of claim 1~~, comprising:

(i) a heavy chain variable region (VH) comprising a heavy chain complementarity determining region 1 (VHCDR1) amino acid sequence of SEQ ID NO: 38, a VHCDR2 amino acid sequence of SEQ ID NO: 36, and a VHCDR3 amino acid sequence of SEQ ID NO: 37; and a light chain variable region (VL) comprising a light chain complementarity determining region 1 (VLCDR1) amino acid sequence of SEQ ID NO: 48, a VLCDR2 amino acid sequence of SEQ ID NO: 49, and a VLCDR3 amino acid sequence of SEQ ID NO: 50;

(ii) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 72, a VHCDR2 amino acid sequence of SEQ ID NO: 71, and a VHCDR3 amino acid sequence of SEQ ID NO: 37; and a VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 48, a VLCDR2 amino acid sequence of SEQ ID NO: 49, and a VLCDR3 amino acid sequence of SEQ ID NO: 50;

(iii) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 38, a VHCDR2 amino acid sequence of SEQ ID NO: 71, and a VHCDR3 amino acid sequence of SEQ ID NO: 37; and a VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 48, a VLCDR2 amino acid sequence of SEQ ID NO: 49, and a VLCDR3 amino acid sequence of SEQ ID NO: 50;

(iv) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 137, a VHCDR2 amino acid sequence of SEQ ID NO: 136, and a VHCDR3 amino acid sequence of SEQ ID NO: 37; and a VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 48, a VLCDR2 amino acid sequence of SEQ ID NO: 49, and a VLCDR3 amino acid sequence of SEQ ID NO: 50;

(v) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 137, a VHCDR2 amino acid sequence of SEQ ID NO: 146, and a VHCDR3 amino acid sequence of SEQ ID NO: 37; and a VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 48, a VLCDR2 amino acid sequence of SEQ ID NO: 49, and a VLCDR3 amino acid sequence of SEQ ID NO: 50; or

(vi) a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 137, a VHCDR2 amino acid sequence of SEQ ID NO: 154, and a VHCDR3 amino acid sequence of SEQ ID NO: 37; and a VL comprising a

VLCDR1 amino acid sequence of SEQ ID NO: 48, a VLCDR2 amino acid sequence of SEQ ID NO: 49, and a VLCDR3 amino acid sequence of SEQ ID NO: 50.

~~3~~2. The antibody molecule of claim 1, comprising a VH comprising a VHCDR1 amino acid sequence of SEQ ID NO: 38, a VHCDR2 amino acid sequence of SEQ ID NO: 36, and a VHCDR3 amino acid sequence of SEQ ID NO: 37; and a VL comprising a VLCDR1 amino acid sequence of SEQ ID NO: 48, a VLCDR2 amino acid sequence of SEQ ID NO: 49, and a VLCDR3 amino acid sequence of SEQ ID NO: 50.

~~4~~3. The antibody molecule of ~~any one of~~ claim~~s~~ 1~~-3~~ or 2, ~~comprising a heavy chain variable region~~wherein the VH comprise~~s~~~~ing~~ the amino acid sequence of SEQ ID NO: 44, 77, 84, 142, 151, or 159, or an amino acid sequence having at least ~~about~~ 85%, 90%, 95%, or 99% sequence identity to SEQ ID NO: 44, 77, 84, 142, 151, or 159.

~~5~~4. The antibody molecule of any one of claims 1~~-4~~3, ~~comprising a light chain variable region~~wherein the VL comprise~~s~~~~ing~~ the amino acid sequence of SEQ ID NO: 55, or an amino acid sequence having at least ~~about~~ 85%, 90%, 95%, or 99% sequence identity to SEQ ID NO: 55.

~~6~~5. The antibody molecule of any one of claims 1~~-5~~4, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 46, 79, 86, 114, 116, or 117, or an amino acid sequence having at least ~~about~~ 85%, 90%, 95%, or 99% sequence identity to SEQ ID NO: 46, 79, 86, 114, 116, or 117.

~~7~~6. The antibody molecule of any one of claims 1~~-6~~5, comprising a light chain comprising the amino acid sequence of SEQ ID NO: 57, or an amino acid sequence having at least ~~about~~ 85%, 90%, 95%, or 99% sequence identity to SEQ ID NO: 57.

~~8~~7. The antibody molecule of any one of claims 1~~-7~~6, ~~comprising~~wherein:

(i) the~~a heavy chain variable region~~VH comprise~~s~~~~ing~~ the amino acid sequence of SEQ ID NO: 44, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto;~~)~~ and ~~a~~ the ~~light chain variable region~~VL comprise~~s~~~~ing~~ the amino acid sequence of SEQ ID NO: 55, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~;

(ii) ~~a~~the ~~heavy chain variable region~~VH comprise~~s~~~~ing~~ the amino acid sequence of SEQ ID NO: 77, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~; and ~~a light chain variable region~~the VL comprise~~s~~~~ing~~ the amino acid sequence of SEQ ID NO: 55, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~;

(iii) ~~a heavy chain variable region~~the VH comprises~~ing~~ the amino acid sequence of SEQ ID NO: 84, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~; and ~~a light chain variable region~~the VL comprises~~ing~~ the amino acid sequence of SEQ ID NO: 55, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~;

(iv) ~~a heavy chain variable region~~the VH comprises~~ing~~ the amino acid sequence of SEQ ID NO: 142, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~; and ~~a light chain variable region~~the VL comprises~~ing~~ the amino acid sequence of SEQ ID NO: 55, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~;

(v) ~~a heavy chain variable region~~the VH comprises~~ing~~ the amino acid sequence of SEQ ID NO: 151, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto;~~)~~ and ~~a light chain variable region~~the VL comprises~~ing~~ the amino acid sequence of SEQ ID NO: 55, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~; or

(vi) ~~a heavy chain variable region~~the VH comprises~~ing~~ the amino acid sequence of SEQ ID NO: 159, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto;~~)~~ and ~~a~~ the VL~~light chain variable region~~ comprises~~ing~~ the amino acid sequence of SEQ ID NO: 55, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~.

~~9~~8. The antibody molecule of any one of claims 1-~~8~~7, ~~comprising~~ wherein ~~a heavy chain variable region~~ the VH comprises~~ing~~ the amino acid sequence of SEQ ID NO: 44; and the ~~a light chain variable region~~ VL comprises~~ing~~ the amino acid sequence of SEQ ID NO: 55.

~~10~~9. The antibody molecule of any one of claims 1-~~9~~8, comprising:

(i) a heavy chain comprising the amino acid sequence of SEQ ID NO: 46, ~~(~~or a sequence having at least ~~about~~ 85%, 90%, 95%, or 99% sequence identity thereto~~)~~; and a light chain comprising the amino acid sequence of SEQ ID NO: 57, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~;

(ii) a heavy chain comprising the amino acid sequence of SEQ ID NO: 114, ~~(~~or a sequence having at least ~~about~~ 85%, 90%, 95%, or 99% sequence identity thereto;~~)~~ and a light chain comprising the amino acid sequence of SEQ ID NO: 57, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~;

(iii) a heavy chain comprising the amino acid sequence of SEQ ID NO: 79, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto;~~)~~ and a light chain comprising the amino acid sequence of SEQ ID NO: 57, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~;

(iv) a heavy chain comprising the amino acid sequence of SEQ ID NO: 116, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~; and a light chain comprising the amino acid sequence of SEQ ID NO: 57, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~;

(v) a heavy chain comprising the amino acid sequence of SEQ ID NO: 86, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto;~~)~~ and a light chain comprising the amino acid sequence of SEQ ID NO: 57, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~; or

(vi) a heavy chain comprising the amino acid sequence of SEQ ID NO: 117, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto;~~)~~ and a light chain comprising the amino acid sequence of SEQ ID NO: 57, ~~(~~or a sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity thereto~~)~~.

10~~1~~. The antibody molecule of any one of claims 1~~-10~~9, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 46, wherein residue 451 of SEQ ID NO: 46 is K, and a light chain comprising the amino acid sequence of SEQ ID NO: 57 ~~and a light chain comprising the amino acid sequence of SEQ ID NO: 57~~.

11. The antibody molecule of any one of claims 1-9, comprising a heavy chain comprising the amino acid sequence of SEQ ID NO: 114, wherein residue 451 of SEQ ID NO: 114 is K, and a light chain comprising the amino acid sequence of SEQ ID NO: 57.

12. The antibody molecule of any one of claims 1-11, which is a human antibody, a full length antibody, a bispecific antibody, Fab, F(ab')2, Fv, or a single chain Fv fragment (scFv).

13. The antibody molecule of any one of claims 1-12, comprising a heavy chain constant region selected from IgG1, IgG2, IgG3, and IgG4, and a light chain constant region chosen from the light chain constant regions of kappa or lambda.

14. The antibody molecule of any one of claims 1-13, wherein the antibody molecule comprises a heavy chain constant region of IgG4 and a light chain constant region of kappa.

15. The antibody molecule of any one of claims 1-14, comprising:

a human IgG4 heavy chain constant region with a mutation at position 228 according to EU numbering, or

a human IgG4 heavy chain constant region with a Serine to Proline mutation at position 228 according to EU numbering, or

a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 92 or 93.

16. The antibody molecule of any one of claims 1-15, comprising a heavy chain constant region comprising an amino acid sequence selected from the group consisting of SEQ ID NOs: 92-103, 119, and 120, and/or a light chain constant region comprising the amino acid sequence of SEQ ID NO: 104.

17. The antibody molecule of any one of claims 1-16, which has one or more (e.g., 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, or more, e.g., all) of the following properties:

(i) binds to human CD73 with a dissociation constant (K_D) of less than ~~about~~ 1 x 10^{-8} M, e.g., when the antibody molecule is tested as a bivalent antibody molecule using Octet;

(ii) binds to soluble human CD73 and/or membrane-bound human CD73;

(iii) does not bind to murine CD73, e.g., as determined using Octet;

(iv) inhibits or reduces the enzymatic activity of CD73 (e.g., soluble human CD73 or membrane-bound human CD73), e.g., human CD73 mediated conversion of adenosine monophosphate (AMP) to adenosine, e.g., as measured by a malachite green (MG) phosphate assay or a modified Cell Titer Glo (CTG) assay;

(v) inhibits at least ~~about~~ 60%, 70%, 80%, or 90% of the enzymatic activity of membrane-bound human CD73, e.g., when the antibody molecule is tested as a bivalent antibody molecule using a modified Cell Titer Glo (CTG) assay;

(vi) increases proliferation of anti-CD3/anti-CD28 stimulated T cells, e.g., CD4+ T cells, in the presence of adenosine monophosphate (AMP), e.g., as measured by a CellTrace Violet (CTV) cell proliferation assay;

(vii) binds to the N-terminal domain of human CD73;

(viii) reduces hydrogen-deuterium exchange at one or more regions of a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105 (e.g., a protein consisting of the amino acid sequence of SEQ ID NO: 171) when bound thereto, wherein the one or more regions are selected from the group consisting of residues 158-172, residues 206-215, residues 368-387, and residues 87-104 of SEQ ID NO: 105, e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry;

(ix) when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105 (e.g., a protein consisting of the amino acid sequence of SEQ ID NO: 171), induces a conformational change in residues 368-387 of SEQ ID NO: 105;

(x) contacts, e.g., directly or indirectly, at least one, two, three, or four residues within residues 158-172 of SEQ ID NO: 105;

(xi) contacts, e.g., directly or indirectly, at least one, two, three, four or five residues within residues 206-215 of SEQ ID NO: 105;

(xii) contacts, e.g., directly or indirectly, at least one, two, three, four or five residues within residues 368-387 of SEQ ID NO: 105 or 106;

(xiii) contacts, e.g., directly or indirectly, at least one, two, three, four or five residues within residues 87-104 of SEQ ID NO: 105;

(xiv) binds to a human CD73 dimer, said dimer consisting of a first CD73 monomer and a second CD73 monomer, wherein when the antibody molecule comprises a first antigen binding domain and a second antigen binding domain, the first antigen binding domain binds to the first CD73 monomer and the second antigen binding domain binds to the second CD73 monomer, e.g., when tested using size exclusion chromatography;

(xv) binds to a catalytically active closed conformation of human CD73 with lower affinity, e.g., 50%, 60%, 70%, 80%, 90%, 95%, or 99% lower affinity, than when the antibody molecule binds to a catalytically inactive open conformation of human CD73;

(xvi) locks human CD73 in a catalytically inactive open conformation; or

(xvii) prevents or reduces the conversion of human CD73 from a catalytically inactive open conformation to a catalytically active closed conformation, e.g., reduces the conversion by at least 1.5-fold, 2-fold, 5-fold, 10-fold, 20-fold, 30-fold, 40-fold, 50-fold, 60-fold, 70-fold, 80-fold, 90-fold, or 100-fold, compared to the conversion in the absence of the antibody molecule.

18. The antibody molecule of any one of claims 1-17, wherein the antibody molecule binds to a human CD73 dimer, said dimer consisting of a first CD73 monomer and a second CD73 monomer, wherein when the antibody molecule comprises a first antigen binding domain and a second antigen binding domain, the first antigen binding domain binds to the first CD73 monomer and the second antigen binding domain binds to the second CD73 monomer.

19. A composition comprising a plurality of the antibody molecules of any one of claims 1-17, wherein the antibody molecules bind to a human CD73 dimer, said dimer consisting of a first CD73 monomer and a second CD73 monomer, each monomer comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, wherein when the antibody molecules in the plurality each comprises the same first antigen binding domain and the same second antigen binding domain, at least 30%, 35%, or 40% of the antibody molecules in said composition bind to the CD73 dimer to form a complex, wherein each of said complex consists of one antibody molecule and one CD73 dimer.

20. The composition of claim 19, wherein at least 70%, 75%, or 80% of the antibody molecules in said composition bind to the CD73 dimer to form said complex.

21. A composition comprising a plurality of the antibody molecules of any one of claims 1-17, wherein the antibody molecules bind to a human CD73 dimer, said dimer consisting of a first CD73 monomer and a second CD73 monomer, each monomer comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, wherein when the antibody molecules in the plurality each comprises the same first antigen binding domain and the same second antigen binding domain, at most 60%, 65%, or 70% of the antibody molecules in said composition bind to the CD73 dimer to form a complex, wherein each of said complex comprises two or more antibody molecules and two or more CD73 dimers.

22. The composition of claim 21, wherein at most 20%, 25%, or 30% of the antibody molecules in said composition bind to the CD73 dimer to form said complex.

23. The composition of any one of claims 19-22, wherein each CD73 monomer consists of the amino acid sequence of SEQ ID NO: 171.

24. The antibody molecule of any one of claims 1-17, wherein the antibody molecule binds to a catalytically active closed conformation of human CD73 with lower affinity, e.g., 50%, 60%, 70%, 80%, 90%, 95%, or 99% lower affinity, than when the antibody molecule binds to a catalytically inactive open conformation of human CD73.

25. The antibody molecule of any one of claims 1-18 or 24, wherein the antibody molecule prevents or reduces the conversion of human CD73 from a catalytically inactive open conformation to a catalytically active closed conformation, e.g., reduces the conversion by at least 1.5-fold, 2-fold, 5-fold, 10-fold, 20-fold, 30-fold, 40-fold, 50-fold, 60-fold, 70-fold, 80-fold, 90-fold, or 100-fold, compared to the conversion in the absence of the antibody molecule.

26. The antibody molecule of any one of claims 1-18, 24, or 25, wherein the antibody molecule reduces hydrogen-deuterium exchange at one or more regions of a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105 when bound thereto, wherein the one or more regions are selected from the group consisting of residues 158-172, residues 206-215, residues 368-387, and residues 87-104 of SEQ ID NO: 105, e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry.

27. The antibody molecule of any one of claims 1-24, or 30-32, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, reduces the average hydrogen-deuterium exchange at X_C residue(s) selected from core region C (residues 368-387 of SEQ ID NO: 105) to a greater extent than at X_A residue(s) selected from core region A (residues 158-172 of SEQ ID NO: 105), X_B residue(s)

selected from core region B (residues 206-215 of SEQ ID NO: 105), or X_D residue(s) selected from core region D (residues 297-309 of SEQ ID NO: 105), e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature, wherein:

X_C is equal to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, or 20,

X_A is equal to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14,

X_B is equal to 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10, and

X_D is equal to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, or 13.

28. The antibody molecule of claim 27, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, reduces the average hydrogen-deuterium exchange at 20 residues selected from core region C to a greater extent than at:

(i) 14 residues selected from core region A,

(ii) 10 residues selected from core region B, or

(iii) 13 residues selected from core region D,

e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature.

29. The antibody molecule of claim 27, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, reduces the average hydrogen-deuterium exchange at 15 residues selected from core region C to a greater extent than at:

(i) 10 residues selected from core region A,

(ii) 8 residues selected from core region B, or

(iii) 10 residues selected from core region D,

e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature.

30. The antibody molecule of claim 27, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, reduces the average hydrogen-deuterium exchange at 10 residues selected from core region C to a greater extent than at:

(i) 7 residues selected from core region A,

(ii) 5 residues selected from core region B, or

(iii) 7 residues selected from core region D,

e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature.

31. The antibody molecule of any one of claims 27-30, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region C to a greater extent than at core region A.

32. The antibody molecule of any one of claims 27-30, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region C to a greater extent than at core region B.

33. The antibody molecule of any one of claims 27-30, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region C to a greater extent than at core region D.

34. The antibody molecule of any one of claims 27-30, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region C to a greater extent than at core region A and core region B.

35. The antibody molecule of any one of claims 27-30, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region C to a greater extent than at core region A and core region D.

36. The antibody molecule of any one of claims 27-30, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region C to a greater extent than at core region B and core region D.

37. The antibody molecule of any one of claims 27-30, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region C to a greater extent than at core region A, core region B, and core region D.

38. The antibody molecule of any one of claims 1-18, or 24-26, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, reduces the average hydrogen-deuterium exchange at X_A residue(s) selected from core region A (residues 158-172 of SEQ ID NO: 105) to a greater extent than at X_B residue(s) selected from core region B (residues 206-215 of SEQ ID NO: 105), X_C residue(s) selected from core region C (residues 368-387 of SEQ ID NO: 105), or X_D residue(s) selected from core region D (residues 297-309 of SEQ ID NO: 105), e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature, wherein:
X_A is equal to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, or 14,

X_B is equal to 1, 2, 3, 4, 5, 6, 7, 8, 9, or 10,
X_C is equal to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, or 20, and
X_D is equal to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, or 13.

39. The antibody molecule of claim 38, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, reduces the average hydrogen-deuterium exchange at 14 residues selected from core region A to a greater extent than at:
(i) 10 residues selected from core region B,
(ii) 20 residues selected from core region C, or
(iii) 13 residues selected from core region D,
e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature.

40. The antibody molecule of claim 38, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, reduces the average hydrogen-deuterium exchange at 10 residues selected from core region A to a greater extent than at:
(i) 8 residues selected from core region B,
(ii) 15 residues selected from core region C, or
(iii) 10 residues selected from core region D,
e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature.

41. The antibody molecule of claim 38, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, reduces the average hydrogen-deuterium exchange at 7 residues selected from core region A to a greater extent than at:
(i) 5 residues selected from core region B,
(ii) 10 residues selected from core region C, or
(iii) 7 residues selected from core region D,
e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature.

42. The antibody molecule of any one of claims 38-41, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region A to a greater extent than at core region B.

43. The antibody molecule of any one of claims 38-41, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region A to a greater extent than at core region C.

44. The antibody molecule of any one of claims 38-41, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region A to a greater extent than at core region D.

45. The antibody molecule of any one of claims 38-41, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region A to a greater extent than at core region B and core region C.

46. The antibody molecule of any one of claims 38-41, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region A to a greater extent than at core region B and core region D.

47. The antibody molecule of any one of claims 38-41, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region A to a greater extent than at core region C and core region D.

48. The antibody molecule of any one of claims 38-41, wherein antibody binding reduces the average hydrogen-deuterium exchange at core region A to a greater extent than at core region B, core region C, and core region D.

49. The antibody molecule of any one of claims 1-18, or 24-48, wherein the antibody molecule reduces hydrogen-deuterium exchange at one or more regions of a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105 when bound thereto, wherein the one or more regions are selected from the group consisting of residues 158-172, residues 206-215, residues 368-387, and residues 87-104 of SEQ ID NO: 105, wherein the region having the greatest reduction in the average hydrogen-deuterium exchange among the one or more regions is not residues 206-215 of SEQ ID NO: 105, e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature.

50. The antibody molecule of any one of claims 1-18, or 24-49, wherein the antibody molecule, when bound to a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105, leads to:

(i) a reduction in the average hydrogen-deuterium exchange of more than, e.g., 0.02, 0.03, 0.04, 0.05, or 0.06 Da per residue at residues 368-387 of SEQ ID NO: 105, e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature; or

(ii) a reduction in the average hydrogen-deuterium exchange of less than, e.g., 0.05, 0.04, 0.03, or 0.02 Da per residue at residues 206-215 of SEQ ID NO: 105, e.g., when the antibody molecule is tested as a bivalent antibody molecule using hydrogen deuterium-exchange mass spectrometry conducted for 1-minute in-exchange at pH 7-8 (e.g., pH 7.5) and room temperature.

51. The antibody molecule of any one of claims 26-50, wherein the protein consists of the amino acid sequence of SEQ ID NO: 171.

52. The antibody molecule of any one of claims 1-18, or 24-51, wherein the antibody molecule contacts, e.g., directly or indirectly, at least one, two, three, or four residues within residues 158-172 of SEQ ID NO: 105.

53. The antibody molecule of any one of claims 1-18, or 24-52, wherein the antibody molecule contacts, e.g., directly or indirectly, at least one, two, three, four or five residues within residues 206-215 of SEQ ID NO: 105.

54. The antibody molecule of any one of claims 1-18, or 24-53, wherein the antibody molecule contacts, e.g., directly or indirectly, at least one, two, three, four or five residues within residues 368-387 of SEQ ID NO: 105 or 106.

55. The antibody molecule of any one of claims 1-18, or 24-54, wherein the antibody molecule contacts, e.g., directly or indirectly, at least one, two, three, four or five residues within residues 87-104 of SEQ ID NO: 105.

56. The antibody molecule of any one of claims 1-18, or 24-55, wherein the antibody molecule reduces tandem mass tag (TMT) labeling at residue K136 (numbered according to SEQ ID NO: 105) of a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105 when bound thereto, e.g., when the antibody molecule is tested as a bivalent antibody molecule using TMT isotope labeling, e.g., using TMT isotope labeling conducted for 30s labeling time, preferably wherein the antibody molecule further reduces TMT labeling at one or more of residues K133, K162, K179, K206, K214, K285, K291, and K341 (numbered according to SEQ ID NO: 105) of the protein, e.g., at one or more of residues K162, K206, K214, K285, K291 and K341(numbered according to SEQ ID NO: 105) of the protein.

57. The antibody molecule of any one of claims 1-18, or 24-56, wherein the antibody molecule increases TMT labeling at one or both of residues K262 and K274 (numbered according to SEQ ID NO: 105) of the protein when

bound thereto, e.g., when the antibody molecule is tested as a bivalent antibody molecule using TMT isotope labeling, e.g., using TMT isotope labeling conducted for 30s labeling time.

58. The antibody molecule of any one of claims 1-18, or 24-57, wherein the antibody molecule reduces tandem mass tag (TMT) labeling at residues K206 and K214 (numbered according to SEQ ID NO: 105) of a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105 when bound thereto, wherein the reduction at residue K214 is no less than 90, 80, 70, 60, or 50% of the reduction at residue K206, e.g., when the antibody molecule is tested as a bivalent antibody molecule using TMT isotope labeling, e.g., wherein the reduction at residue K214 is no less than 90, 80, 70, 60, or 50% of the reduction at residue K206 using TMT isotope labeling conducted for 30s labeling time, e.g., wherein the reduction at residue K214 is no less than 90, 80, 70, 60, 50, 40, or 30% of the reduction at residue K206 using TMT isotope labeling conducted for 300s labeling time.

59. The antibody molecule of any one of claims 1-18, or 24-58, wherein the antibody molecule reduces tandem mass tag (TMT) labeling at residue K162 (numbered according to SEQ ID NO: 105) of a protein comprising the amino acid sequence of residues 27-547 of SEQ ID NO: 105 when bound thereto, when the antibody molecule is tested using TMT isotope labeling conducted for 30s labeling time, wherein:

(i) the antibody molecule does not reduce TMT labeling at residue K162 when tested using TMT isotope labeling conducted for 300s labeling time, or

(ii) the antibody molecule reduces TMT labeling at residue K162 when tested using TMT isotope labeling conducted for 300s labeling time, wherein the reduction at residue K162 under 300s labeling time is no more than 20, 30, 40, or 50% of the reduction at residue K162 under 30s labeling time,

e.g., when the antibody molecule is tested as a bivalent antibody molecule.

60. The antibody molecule of any one of claims 1-18, or 24-59, wherein the antibody molecule binds to one or more residues of CD73, e.g., via an electrostatic interaction and/or a hydrogen-bond, wherein the one or more residues are selected from the group consisting of residues Y110, K136, L132, L157, K162, S155, and T209, numbered according to SEQ ID NO: 105, e.g., as measured using crystal structure analysis.

61. The antibody molecule of any one of claims 1-18, or 24-60, wherein the antibody molecule comprises a heavy chain variable region and a light chain variable region, wherein the antibody molecule has one or more (e.g., 1, 2, 3, 4, or all) of the following properties:

(i) the antibody molecule (e.g., the heavy chain variable region, e.g., R54 of the heavy chain variable region, numbered according to Kabat numbering) binds to Y110 (e.g., the backbone carbonyl of Y110) or K136

(e.g., the backbone carbonyl of K136) of CD73 (numbered according to SEQ ID NO: 105), e.g., via an electrostatic interaction, e.g., as measured using crystal structure analysis,

(ii) the antibody molecule (e.g., the heavy chain variable region, e.g., R31 of the heavy chain variable region, numbered according to Kabat numbering) binds to L132 (e.g., the backbone carbonyl of L132) or L157 (e.g., the backbone carbonyl of L157) of CD73 (numbered according to SEQ ID NO: 105), e.g., via an electrostatic interaction, e.g., as measured using crystal structure analysis,

(iii) the antibody molecule (e.g., the heavy chain variable region, e.g., S99 (e.g., the backbone carbonyl of S99), R31 (e.g., the backbone carbonyl of R31), or E95 (e.g., the sidechain of E95) of the heavy chain variable region, numbered according to Kabat numbering) binds to K162 (e.g., the sidechain of K162) of CD73 (numbered according to SEQ ID NO: 105), e.g., via an electrostatic interaction, e.g., as measured using crystal structure analysis,

(iv) the antibody molecule (e.g., the heavy chain variable region, e.g., E98 of the heavy chain variable region, numbered according to Kabat numbering) binds to S155 (e.g., the sidechain of S155) of CD73 (numbered according to SEQ ID NO: 105), e.g., via a hydrogen-bond, e.g., as measured using crystal structure analysis, and

(v) the antibody molecule (e.g., the light chain variable region, e.g., W32 (e.g., the sidechain of W32) of the light chain variable region, numbered according to Kabat numbering) binds to T209 (e.g., the sidechain of T209) of CD73 (numbered according to SEQ ID NO: 105), e.g., via a hydrogen-bond, e.g., as measured using crystal structure analysis.

62. The antibody molecule of any one of claims 1-18, or 24-61, wherein the antibody molecule binds to one or more regions of CD73, e.g., via shape complementarity and/or a Van der Waal interaction, wherein the one or more regions are selected from the group consisting of residues 155-170, 136-138, and 209-210, numbered according to SEQ ID NO: 105, e.g., as measured using crystal structure analysis.

63. The antibody molecule of any one of claims 1-18, or 24-62, wherein the antibody molecule comprises a heavy chain variable region and a light chain variable region, wherein the antibody molecule has one or more (e.g., 1, 2, or all) of the following properties:

(i) the antibody molecule (e.g., the heavy chain variable region, e.g., residue 33, 50, 52, 56, 97, 98, 100, or 100a of the heavy chain variable region, numbered according to Kabat numbering) binds to residues 155-170 of CD73 (numbered according to SEQ ID NO: 105), e.g., via shape complementarity and/or a Van der Waal interaction, e.g., as measured using crystal structure analysis,

(ii) the antibody molecule (e.g., the heavy chain variable region, e.g., residue 30 or 31 of the heavy chain variable region, numbered according to Kabat numbering) binds to residues136-138 of CD73 (numbered according

to SEQ ID NO: 105), e.g., via shape complementarity and/or a Van der Waal interaction, e.g., as measured using crystal structure analysis, and

(iii) the antibody molecule (e.g., the light chain variable region, e.g., residue 30 or 32 of the light chain variable region, numbered according to Kabat numbering) binds to residues 209-210 of CD73 (numbered according to SEQ ID NO: 105), e.g., as measured using crystal structure analysis.

64. A pharmaceutical composition comprising the antibody molecule or composition of any one of claims 1-63 and a pharmaceutically acceptable carrier, excipient or stabilizer.

65. A nucleic acid encoding the ~~antibody heavy~~VH ~~or~~ and the ~~light chain variable region~~VL of the antibody molecule of any one of claims 1-18 or 24-63.

66. ~~A nucleic acid encoding a heavy chain variable region, wherein t~~The nucleic acid of claim 65, which comprises the nucleotide sequence of SEQ ID NO: 45, 78, 85, 143, 152, or 160, or a nucleotide sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity to SEQ ID NO: 45, 78, 85, 143, 152, or 160.

67. The nucleic acid of claim 65 or 66, wherein the nucleic acid encodes a heavy chain, wherein the nucleic acid comprises the nucleotide sequence of SEQ ID NO: 47, 80, or 87, or a nucleotide sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity to SEQ ID NO: 47, 80, or 87.

68. ~~A nucleic acid encoding a light chain variable region~~The nucleic acid of any one of claims 65-67, wherein the nucleic acid comprises the nucleotide sequence of SEQ ID NO: 56 or 144, or a nucleotide sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity to SEQ ID NO: 56 or 144.

69. The nucleic acid of any one of claims 65-68, wherein the nucleic acid encodes a light chain, wherein the nucleic acid comprises the nucleotide sequence of SEQ ID NO: 58, or a nucleotide sequence having at least ~~about 85%,~~ 90%, 95%, or 99% sequence identity to SEQ ID NO: 58.

70. An expression vector comprising the nucleic acid of any one of claims 65-69.

71. A host cell comprising the nucleic acid of any one of claims 65-69 or the expression vector of claim 70.

72. A method of producing an antibody molecule, the method comprising culturing the host cell of claim 71 under conditions suitable for gene expression.

73. ~~The~~ Use of the antibody molecule, composition, or pharmaceutical composition of any one of claims 1-64, in an amount effective to stimulate the immune response, ~~for~~ in the manufacture of a medicament ~~use in~~for stimulating an immune response in a subject.

74. Use of the antibody molecule, composition, or pharmaceutical composition of any one of claims 1-64, in an amount effective to treat the cancer, in the manufacture of a medicament for the treatment of cancer.

75. The use of claim 74, wherein the cancer is chosen from lung cancer (e.g., non-small cell lung cancer), pancreas cancer (e.g., pancreatic ductal adenocarcinoma), breast cancer (e.g., triple-negative breast cancer), melanoma, head and neck cancer (e.g., squamous head and neck cancer), colorectal cancer (e.g., microsatellite stable (MSS) colorectal cancer), ovarian cancer, or renal cancer (e.g., renal cell carcinoma).

76. The use of any one of claims 73-75, wherein the antibody molecule is to be administered at a dose of ~~about~~ 100 mg to 1600 mg, ~~about~~ 100 mg to 1400 mg, ~~about~~ 100 mg to 1200 mg, ~~about~~ 100 mg to 1000 mg, ~~about~~ 100 mg to 800 mg, ~~about~~ 100 mg to 600 mg, ~~about~~ 100 mg to 400 mg, ~~about~~ 100 mg to 200 mg, or ~~about~~ 100 mg, ~~about~~ 180 mg, or ~~about~~ 200 mg, once every two weeks (Q2W), preferably wherein the antibody molecule is to be administered at a dose of at least ~~about~~ 180 mg Q2W.

77. The use of any one of claims 73-75, wherein the antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 5 mg to 100 mg, ~~about~~ 100 mg to 500 mg, ~~about~~ 500 mg to 1000 mg, ~~about~~ 1000 mg to 1500 mg, ~~about~~ 1500 mg to 2000 mg, ~~about~~ 2000 mg to 2500 mg, ~~about~~ 2500 mg to 3000 mg, ~~about~~ 3000 mg to 3500 mg, or ~~about~~ 3500 mg to 4000 mg, e.g., at a dose of ~~about~~ 6 mg, ~~about~~ 20 mg, ~~about~~ 60 mg, ~~about~~ 200 mg, ~~about~~ 600 mg, ~~about~~ 1200 mg, ~~about~~ 2400 mg, ~~about~~ 3000 mg, or ~~about~~ 3600 mg, e.g., once every week (QW), once every two weeks (Q2W), or once every four weeks (Q4W), e.g., Q2W.

78. The use of any one of claims 73-77, wherein the antibody molecule is to be administered intravenously.

79. The use of any one of claims 73-78, wherein the antibody molecule is to be administered in combination with a second therapeutic agent or procedure.

80. The use of claim 79, wherein the second therapeutic agent or procedure is chosen from one or more of chemotherapy, a targeted anti-cancer therapy, an oncolytic drug, a cytotoxic agent, an immune-based therapy, a cytokine, surgical procedure, a radiation procedure, an activator of a costimulatory molecule, an inhibitor of an inhibitory molecule, a vaccine, or a cell therapy.

81. The use of claim 79, wherein the second therapeutic agent is chosen from one or more of: 1) a protein kinase C (PKC) inhibitor; 2) a heat shock protein 90 (HSP90) inhibitor; 3) an inhibitor of a phosphoinositide 3-kinase (PI3K) and/or target of rapamycin (mTOR); 4) an inhibitor of cytochrome P450 (*e.g*., a CYP17 inhibitor or a 17alpha-Hydroxylase/C17-20 Lyase inhibitor); 5) an iron chelating agent; 6) an aromatase inhibitor; 7) an inhibitor of p53, *e.g.*, an inhibitor of a p53/Mdm2 interaction; 8) an apoptosis inducer; 9) an angiogenesis inhibitor; 10) an aldosterone synthase inhibitor; 11) a smoothened (SMO) receptor inhibitor; 12) a prolactin receptor (PRLR) inhibitor; 13) a Wnt signaling inhibitor; 14) a CDK4/6 inhibitor; 15) a fibroblast growth factor receptor 2 (FGFR2)/fibroblast growth factor receptor 4 (FGFR4) inhibitor; 16) an inhibitor of macrophage colony-stimulating factor (M-CSF); 17) an inhibitor of one or more of c-KIT, histamine release, Flt3 (*e.g.*, FLK2/STK1) or PKC; 18) an inhibitor of one or more of VEGFR-2 (*e.g.*, FLK-1/KDR), PDGFRbeta, c-KIT or Raf kinase C; 19) a somatostatin agonist and/or a growth hormone release inhibitor; 20) an anaplastic lymphoma kinase (ALK) inhibitor; 21) an insulin-like growth factor 1 receptor (IGF-1R) inhibitor; 22) a P-Glycoprotein 1 inhibitor; 23) a vascular endothelial growth factor receptor (VEGFR) inhibitor; 24) a BCR-ABL kinase inhibitor; 25) an FGFR inhibitor; 26) an inhibitor of CYP11B2; 27) a HDM2 inhibitor, *e.g.*, an inhibitor of the HDM2-p53 interaction; 28) an inhibitor of a tyrosine kinase; 29) an inhibitor of c-MET; 30) an inhibitor of JAK; 31) an inhibitor of DAC; 32) an inhibitor of 11β-hydroxylase; 33) an inhibitor of IAP; 34) an inhibitor of PIM kinase; 35) an inhibitor of Porcupine; 36) an inhibitor of BRAF, *e.g.*, BRAF V600E or wild-type BRAF; 37) an inhibitor of HER3; 38) an inhibitor of MEK; or 39) an inhibitor of a lipid kinase.

82. The use of claim 79, wherein the antibody molecule is to be administered in combination with a PD-1 inhibitor, preferably wherein the PD-1 inhibitor is selected from the group consisting of PDR001, Nivolumab, Pembrolizumab, Pidilizumab, MEDI0680, REGN2810, TSR-042, PF-06801591, and AMP-224, preferably wherein:

the PD-1 inhibitor is an anti-PD-1 antibody molecule, wherein the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 250 mg to 350 mg, ~~about~~ 350 mg to 450 mg, or ~~about~~ 450 mg to 550 mg, e.g., at a dose of ~~about~~ 300 mg or ~~about~~ 400 mg, e.g., once every three weeks (Q3W) or once every four weeks (Q4W), e.g., at a dose of ~~about~~ 300 mg Q3W, or at a dose of ~~about~~ 400 mg Q4W, preferably wherein:

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 5 mg to 100 mg, e.g., 20 mg, Q2W, and the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 5 mg to 100 mg, e.g., 60 mg, Q2W, and the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 100 mg to 500 mg, e.g., 200 mg, Q2W, and the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 500 mg to 1000 mg, e.g., 600 mg, Q2W, and the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 1000 mg to 1500 mg, e.g., 1200 mg, Q2W, and the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, and the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3000 mg to 3500 mg, e.g., 3000 mg, Q2W, and the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, or

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3500 mg to 4000 mg, e.g., 3600 mg, Q2W, and the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W.

83. The use of claim 79, wherein the antibody molecule is to be administered in combination with an adenosine A2AR antagonist, preferably wherein:

(i) the adenosine A2AR antagonist is selected from the group consisting of PBF509, CPI444, AZD4635, Vipadenant, GBV-2034, and AB928; or

(ii) the adenosine A2AR antagonist is selected from the group consisting of 5-bromo-2,6-di-(1H-pyrazol-1-yl)pyrimidine-4-amine; (S)-7-(5-methylfuran-2-yl)-3-((6-(((tetrahydrofuran-3-yl)oxy)methyl)pyridin-2-yl)methyl)-3H-[1,2,3]triazolo[4,5-d]pyrimidin-5-amine; (R)-7-(5-methylfuran-2-yl)-3-((6-(((tetrahydrofuran-3-yl)oxy)methyl)pyridin-2-yl)methyl)-3H-[1,2,3]triazolo[4,5-d]pyrimidin-5-amine, or racemate thereof; 7-(5-

methylfuran-2-yl)-3-((6-(((tetrahydrofuran-3-yl)oxy)methyl)pyridin-2-yl)methyl)-3H-[1,2,3]triazolo[4,5-d]pyrimidin-5-amine; and 6-(2-chloro-6-methylpyridin-4-yl)-5-(4-fluorophenyl)-1,2,4-triazin-3-amine, preferably wherein:

the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 20 mg to 60 mg, ~~about~~ 60 mg to 100 mg, ~~about~~ 100 mg to 140 mg, ~~about~~ 140 mg to 180 mg, ~~about~~ 180 mg to 220 mg, ~~about~~ 220 mg to 260 mg, ~~about~~ 260 mg to 300 mg, ~~about~~ 300 mg to 340 mg, ~~about~~ 340 mg to 380 mg, ~~about~~ 380 mg to 480 mg, ~~about~~ 480 mg to 580 mg, or ~~about~~ 580 mg to 680 mg, e.g., at a dose of ~~about~~ 40 mg, ~~about~~ 80 mg, ~~about~~ 160 mg, ~~about~~ 320 mg, ~~about~~ 480 mg, or ~~about~~ 620 mg, e.g., once a day (QD), twice a day (BID), or three times a day (TID), e.g., BID, preferably wherein:

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 5 mg to 100 mg, e.g., 20 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 20 mg to 60 mg, e.g., 40 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 5 mg to 100 mg, e.g., 60 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 20 mg to 60 mg, e.g., 40 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 100 mg to 500 mg, e.g., 200 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 60 mg to 100 mg, e.g., 80 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 100 mg to 500 mg, e.g., 200 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 140 mg to 180 mg, e.g., 160 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 500 mg to 1000 mg, e.g., 600 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 140 mg to 180 mg, e.g., 160 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 1000 mg to 1500 mg, e.g., 1200 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 140 mg to 180 mg, e.g., 160 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 140 mg to 180 mg, e.g., 160 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 300 mg to 340 mg, e.g., 320 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 480 mg to 580 mg, e.g., 480 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 580 mg to 680 mg, e.g., 620 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3000 mg to 3500 mg, e.g., 3000 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 300 mg to 340 mg, e.g., 320 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3000 mg to 3500 mg, e.g., 3000 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 480 mg to 580 mg, e.g., 480 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3000 mg to 3500 mg, e.g., 3000 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 580 mg to 680 mg, e.g., 620 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3500 mg to 4000 mg, e.g., 3600 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 300 mg to 340 mg, e.g., 320 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3500 mg to 4000 mg, e.g., 3600 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 480 mg to 580 mg, e.g., 480 mg, BID, or

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3500 mg to 4000 mg, e.g., 3600 mg, Q2W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 580 mg to 680 mg, e.g., 620 mg, BID.

84. The use of claim 79, wherein the antibody molecule is to be administered in combination with a PD-1 inhibitor and an adenosine A2AR antagonist, preferably wherein:

the PD-1 inhibitor is an anti-PD-1 antibody molecule, wherein the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 250 mg to 350 mg, ~~about~~ 350 mg to 450 mg, or ~~about~~ 450 mg to 550 mg, e.g., at a dose of ~~about~~ 300 mg or ~~about~~ 400 mg, e.g., once every three weeks (Q3W) or once every four weeks (Q4W), e.g., at a dose of ~~about~~ 300 mg Q3W, or at a dose of ~~about~~ 400 mg Q4W, preferably wherein:

the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 20 mg to 60 mg, ~~about~~ 60 mg to 100 mg, ~~about~~ 100 mg to 140 mg, ~~about~~ 140 mg to 180 mg, ~~about~~ 180 mg to 220 mg, ~~about~~ 220 mg to 260

mg, about 260 mg to 300 mg, about 300 mg to 340 mg, or about 340 mg to 380 mg, e.g., at a dose of about 40 mg, about 80 mg, about 160 mg, or about 320 mg, e.g., once a day (QD), twice a day (BID), or three times a day (TID), e.g., BID, preferably wherein:

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of about 5 mg to 100 mg, e.g., 20 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of about 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of about 20 mg to 60 mg, e.g., 40 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of about 5 mg to 100 mg, e.g., 60 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of about 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of about 20 mg to 60 mg, e.g., 40 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of about 100 mg to 500 mg, e.g., 200 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of about 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of about 60 mg to 100 mg, e.g., 80 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of about 100 mg to 500 mg, e.g., 200 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of about 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of about 140 mg to 180 mg, e.g., 160 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of about 500 mg to 1000 mg, e.g., 600 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of about 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of about 140 mg to 180 mg, e.g., 160 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of about 1000 mg to 1500 mg, e.g., 1200 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of about 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of about 140 mg to 180 mg, e.g., 160 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of about 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of about 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of about 140 mg to 180 mg, e.g., 160 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of about 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose

of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 300 mg to 340 mg, e.g., 320 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 480 mg to 580 mg, e.g., 480 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 2000 mg to 2500 mg, e.g., 2400 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 580 mg to 680 mg, e.g., 620 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3000 mg to 3500 mg, e.g., 3000 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 300 mg to 340 mg, e.g., 320 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3000 mg to 3500 mg, e.g., 3000 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 480 mg to 580 mg, e.g., 480 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3000 mg to 3500 mg, e.g., 3000 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 580 mg to 680 mg, e.g., 620 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3500 mg to 4000 mg, e.g., 3600 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 300 mg to 340 mg, e.g., 320 mg, BID,

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3500 mg to 4000 mg, e.g., 3600 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 480 mg to 580 mg, e.g., 480 mg, BID, or

the anti-CD73 antibody molecule is to be administered, e.g., intravenously, at a dose of ~~about~~ 3500 mg to 4000 mg, e.g., 3600 mg, Q2W, the anti-PD-1 antibody molecule is to be administered, e.g., intravenously, at a dose

of ~~about~~ 350 mg to 450 mg, e.g., 400 mg, Q4W, and the adenosine A2AR antagonist is to be administered, e.g., orally, at a dose of ~~about~~ 580 mg to 680 mg, e.g., 620 mg, BID.

85. The use of claim 79, wherein the antibody molecule is to be administered in combination with a PD-L1 inhibitor, preferably wherein the PD-L1 inhibitor is selected from the group consisting of FAZ053, Atezolizumab, Avelumab, Durvalumab, and BMS-936559.

86. The use of claim 79, wherein the antibody molecule is to be administered in combination with a PD-L1 inhibitor and an adenosine A2AR antagonist.

87. The use of claim 79, wherein the antibody molecule is to be administered in combination with:

(i) a CTLA-4 inhibitor, preferably wherein the CTLA-4 inhibitor is Ipilimumab or Tremelimumab;

(ii) a TIM-3 inhibitor, preferably wherein the TIM-3 inhibitor is selected from the group consisting of MGB453, TSR-022, and LY3321367;

(iii) a LAG-3 inhibitor, preferably wherein the LAG-3 inhibitor is selected from the group consisting of LAG525, BMS-986016, TSR-033, MK-4280 and REGN3767;

(iv) a GITR agonist, preferably wherein the GITR agonist is selected from the group consisting of GWN323, BMS-986156, MK-4166, MK-1248, TRX518, INCAGN1876, AMG 228, and INBRX-110;

(v) an anti-CD3 multispecific antibody molecule, preferably wherein the anti-CD3 multispecific antibody molecule is an anti-CD3 x anti-CD123 bispecific antibody molecule (e.g., XENP14045), or an anti-CD3 x anti-CD20 bispecific antibody molecule (e.g., XENP13676);

(vi) a cytokine molecule, preferably wherein the cytokine molecule is IL-15 complexed with a soluble form of IL-15 receptor alpha (IL-15Ra);

(vii) a STING agonist;

(viii) a macrophage colony-stimulating factor (M-CSF) inhibitor, preferably wherein the M-CSF inhibitor is MCS110;

(ix) a CSF-1R inhibitor, preferably wherein the CSF-1R inhibitor is BLZ945;

(x) an inhibitor of indoleamine 2,3-dioxygenase (IDO) and/or tryptophan 2,3-dioxygenase (TDO);

(xi) a TGF-β inhibitor;

(xii) an oncolytic vaccine;

(xiii) a chimeric antigen receptor (CAR) T-cell therapy, preferably wherein the CAR T-cell therapy is CTL019; or

(xiv) a compound disclosed in Table 18.

88. A method of detecting CD73 in a biological sample, comprising (i) contacting the sample with the antibody molecule or composition of any one of claims 1-63 under conditions that allow interaction of the antibody molecule or composition and CD73 to occur, and (ii) detecting formation of a complex between the antibody molecule or composition and the sample ~~or the subject~~.