

WHAT IS CLAIMED IS:

1. An antigen-recognizing receptor, comprising an extracellular antigen-binding domain, a transmembrane domain, and an intracellular signaling domain, wherein the extracellular antigen-binding domain specifically binds to CD371.
- 5 2. The antigen-recognizing receptor of claim 1, wherein the extracellular antigen-binding domain is a single-chain variable fragment (scFv).
3. The antigen-recognizing receptor of claim 2, wherein the extracellular antigen-binding domain is a human scFv.
4. The antigen-recognizing receptor of claim 1, wherein the extracellular antigen-binding domain is a Fab, which is optionally crosslinked.
- 10 5. The antigen-recognizing receptor of claim 1, wherein the extracellular antigen-binding domain is a F(ab)₂.
6. The antigen-recognizing receptor of any one of claims 2-5, wherein one or more of the scFv, Fab and F(ab)₂ are comprised in a fusion protein with a heterologous sequence to form the extracellular antigen-binding domain.
- 15 7. The antigen-recognizing receptor of any one of claims 1-6, wherein the extracellular antigen-binding domain comprises:
 - (a) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 28 or a conservative modification thereof; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 29 or a conservative modification thereof; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 30 or a conservative modification thereof;
 - (b) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 34 or a conservative modification thereof; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 35 or a conservative modification thereof; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 36 or a conservative modification thereof;
- 20 25

(c) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 40 or a conservative modification thereof; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 42 or a conservative modification thereof; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 43 or a conservative modification thereof;

(d) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 462 or a conservative modification thereof; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 47 or a conservative modification thereof; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 48 or a conservative modification thereof;

(e) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 52 or a conservative modification thereof; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 53 or a conservative modification thereof; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 54 or a conservative modification thereof; or

(f) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 58 or a conservative modification thereof; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 59 or a conservative modification thereof; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 60 or a conservative modification thereof;

8. The antigen-recognizing receptor of any one of claims 1-7, wherein the extracellular antigen-binding domain comprises: a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 28; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 29; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 30.

9. The antigen-recognizing receptor of any one of claims 1-8, wherein the extracellular antigen-binding domain comprises:

(a) a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 31 or a conservative modification thereof; a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 32 or a conservative

modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 33 or a conservative modification thereof;

- (b) a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 37 or a conservative modification thereof; a light chain variable region
- 5 CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 38 or a conservative modification thereof; and a light chain variable region CDR3 comprising SEQ ID NO: 39 or a conservative modification thereof;

- (c) a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 43 or a conservative modification thereof; a light chain variable region
- 10 CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 44 or a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 45 or a conservative modification thereof;

- (d) a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 49 or a conservative modification thereof; a light chain variable region
- 15 CDR2 comprising SEQ ID NO: 50 or a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 51 or a conservative modification thereof;

- (e) a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 55 or a conservative modification thereof; a light chain variable region
- 20 CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 56 or a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 57 or a conservative modification thereof; or

- (f) a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 61 or a conservative modification thereof; a light chain variable region
- 25 CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 62 or a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 63 or a conservative modification thereof;

10. The antigen-recognizing receptor of any one of claims 1-9, wherein the extracellular antigen-binding domain comprises: a light chain variable region CDR1 comprising the amino
- 30 acid sequence set forth in SEQ ID NO: 31; a light chain variable region CDR2 comprising

the amino acid sequence set forth in SEQ ID NO: 32; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 33.

11. The antigen-recognizing receptor of any one of claims 1-10, wherein the extracellular antigen-binding domain comprises:

5 (a) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 28; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 29; a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 30; a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 31; a light chain variable region CDR2
10 comprising the amino acid sequence set forth in SEQ ID NO: 32; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 33;

(b) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 34; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 35; a heavy chain variable region CDR3 comprising the amino acid
15 sequence set forth in SEQ ID NO: 36; a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 37; a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 38; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 39;

(c) a heavy chain variable region CDR1 comprising the amino acid sequence set
20 forth in SEQ ID NO: 40; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 41; a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 42; a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 43; a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 44; and a light
25 chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 45;

(d) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 46; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 47; a heavy chain variable region CDR3 comprising the
30 amino acid sequence set forth in SEQ ID NO: 48; a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 49; a light chain variable

region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 50; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 51;

5 (e) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 52; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 53; a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 54; a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 55; a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 56; and a light chain variable
10 region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 57; or

(f) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 58; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 59; a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 60; a light chain variable region CDR1 comprising the
15 amino acid sequence set forth in SEQ ID NO: 61; a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 62; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 63.

12. The antigen-recognizing receptor of any one of claims 1-11, wherein the extracellular antigen-binding domain comprises: a heavy chain variable region CDR1 comprising the
20 amino acid sequence set forth in SEQ ID NO: 28; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 29; a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 30; a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 31; a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID
25 NO: 32; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 33.

13. The antigen-recognizing receptor of any one of claims 1-12, wherein the extracellular antigen-binding domain comprises a heavy chain variable region comprising an amino acid sequence that is at least about 80%, about 81%, about 82%, about 83%, about 84%, about
30 85%, about 86%, about 87%, about 88%, about 89%, about 90%, about 91%, about 92%,

about 93%, about 94%, about 95%, about 96%, about 97%, about 98% or about 99% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11.

14. The antigen-recognizing receptor of any one of claims 1-13, wherein the extracellular antigen-binding domain comprises a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 1, SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11.

15. The antigen-recognizing receptor of any one of claims 1-14, wherein the extracellular antigen-binding domain comprises a heavy chain variable region comprising amino acids having a sequence set forth in SEQ ID NO: 1.

16. The antigen-recognizing receptor of any one of claims 1-15, wherein the extracellular antigen-binding domain comprises a light chain variable region comprising an amino acid sequence that is at least about 80%, about 81%, about 82%, about 83%, about 84%, about 85%, about 86%, about 87%, about 88%, about 89%, about 90%, about 91%, about 92%, about 93%, about 94%, about 95%, about 96%, about 97%, about 98% or about 99% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, or SEQ ID NO: 12.

17. The antigen-recognizing receptor of any one of claims 1-16, wherein the extracellular antigen-binding domain comprises a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, or SEQ ID NO: 12.

18. The antigen-recognizing receptor of any one of claims 1-17, wherein the extracellular antigen-binding domain comprises a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 2.

19. The antigen-recognizing receptor of any one of claims 1-18, wherein the extracellular antigen-binding domain comprises: (a) a heavy chain variable region comprising an amino acid sequence that is at least about 80%, about 81%, about 82%, about 83%, about 84%, about 85%, about 86%, about 87%, about 88%, about 89%, about 90%, about 91%, about

92%, about 93%, about 94%, about 95%, about 96%, about 97%, about 98% or about 99% homologous or identical to the amino acid sequence selected set forth in SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11; and (b) a light chain variable region comprising an amino acid sequence that is at least about 80%, about 81%, about 82%, about 83%, about 84%, about 85%, about 86%, about 87%, about 88%, about 89%, about 90%, about 91%, about 92%, about 93%, about 94%, about 95%, about 96%, about 97%, about 98% or about 99% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, or SEQ ID NO: 12.

20. The antigen-recognizing receptor of any one of claims 1-19, wherein the extracellular antigen-binding domain comprises: (a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 1, SEQ ID NO: 3, SEQ ID NO: 5, SEQ ID NO: 7, SEQ ID NO: 9, or SEQ ID NO: 11; and (b) a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 2, SEQ ID NO: 4, SEQ ID NO: 6, SEQ ID NO: 8, SEQ ID NO: 10, or SEQ ID NO: 12.

21. The antigen-recognizing receptor of claim 14, wherein the extracellular antigen-binding domain comprises:

(a) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 1, and a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 2;

(b) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 3, and a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 4;

(c) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 5, and a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 6;

(d) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 7, and a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 8;

(e) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 9, and a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 10; or

5 (f) a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 11, and a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 12.

22. The antigen-recognizing receptor of any one of claims 1-21, wherein the extracellular antigen-binding domain comprises a heavy chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 1; and a light chain variable region comprising the amino acid sequence set forth in SEQ ID NO: 2.

23. The antigen-recognizing receptor of any one of claims 1-22, wherein the extracellular antigen-binding domain comprises a linker between a heavy chain variable region and a light chain variable region of the extracellular antigen-binding domain.

15 24. The antigen-recognizing receptor of claim 23, wherein the linker has the amino acid sequence set forth in SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 91, SEQ ID NO: 92, SEQ ID NO: 93, or SEQ ID NO: 94.

25. The antigen-recognizing receptor of claim 23, wherein the linker has the amino acid sequence set forth in SEQ ID NO: 13 or SEQ ID NO: 14.

20 26. The antigen-recognizing receptor of any one of claims 1-25, wherein the extracellular antigen-binding domain comprises a signal peptide that is covalently joined to the 5' terminus of the extracellular antigen-binding domain.

27. The antigen-recognizing receptor of any one of claims 1-26, wherein the extracellular antigen-binding domain comprises a heavy chain variable region and a light chain variable region, which are positioned from the N- to the C-terminus: V_H-V_L.

28. The antigen-recognizing receptor of any one of claims 1-26, wherein the extracellular antigen-binding domain binds to CD371 with a low binding affinity.

29. The antigen-recognizing receptor of any one of claims 1-26, wherein the extracellular antigen-binding domain binds to CD371 with a dissociation constant (K_d) of 1×10^{-8} M or more.
30. The antigen-recognizing receptor of any one of claims 1-29, wherein the
5 transmembrane domain comprises a CD8 polypeptide, a CD28 polypeptide, a CD3 ζ polypeptide, a CD4 polypeptide, a 4-1BB polypeptide, an OX40 polypeptide, an ICOS polypeptide, a CTLA-4 polypeptide, a PD-1 polypeptide, a LAG-3 polypeptide, a 2B4 polypeptide, a BTLA polypeptide, or a combination thereof.
31. The antigen-recognizing receptor of claim 30, wherein the transmembrane domain
10 comprises a CD28 polypeptide.
32. The antigen-recognizing receptor of any one of claims 1-31, wherein the intracellular signaling domain comprises a CD3 ζ polypeptide.
33. The antigen-recognizing receptor of any one of claims 1-32, wherein the intracellular signaling domain further comprises at least one co-stimulatory signaling region.
- 15 34. The antigen-recognizing receptor of claim 33, wherein the at least one co-stimulatory signaling region comprises a CD28 polypeptide, a 4-1BB polypeptide, an OX40 polypeptide, an ICOS polypeptide, a DAP-10 polypeptide, or a combination thereof.
35. The antigen-recognizing receptor of claim 33 or 34, wherein the at least one co-stimulatory signaling region comprises a CD28 polypeptide or a 4-1BB polypeptide.
- 20 36. The antigen-recognizing receptor of any one of claims 1-35, wherein the antigen-recognizing receptor is a chimeric antigen receptor (CAR), a T-cell Receptor (TCR), or a T-cell like fusion protein.
37. The antigen-recognizing receptor of any one of claims 1-36, wherein the antigen-recognizing receptor is a CAR.
- 25 38. The antigen-recognizing receptor of any one of claims 1-37, wherein the antigen-recognizing receptor is recombinantly expressed.

39. The antigen-recognizing receptor of any one of claims 1-38, wherein the antigen-recognizing receptor is expressed from a vector.
40. The antigen-recognizing receptor of claim 39, wherein the vector is a γ -retroviral vector.
- 5 41. A cell comprising the antigen-recognizing receptor of any one of claims 1-40.
42. The cell of claim 41, wherein the cell is transduced with the antigen-recognizing receptor.
43. The cell of claim 41 or 42, wherein the antigen-recognizing receptor is constitutively expressed on the surface of the cell.
- 10 44. The cell of any one of claims 41-43, wherein the cell is engineered to express a cytokine or a fragment thereof.
45. The cell of claim 44, wherein the cell comprises an exogenous polypeptide of the cytokine or fragment thereof.
- 15 46. The cell of claim 44 or 45, wherein the cell comprises a nucleic acid molecule encoding the cytokine or fragment thereof.
47. The cell of any one of claims 44-46, wherein the cytokine is selected from the group consisting of IL-18, IL-33, IL-36, and combinations thereof.
48. The cell of any one of claims 44-47, wherein the cytokine is IL-18.
49. The cell of any one of claims 41-48, wherein the cell is an immunoresponsive cell.
- 20 50. The cell of any one of claims 41-49, wherein the cell is a cell of the lymphoid lineage or a cell of the myeloid lineage.
51. The cell of any one of claims 41-50, wherein the cell is selected from the group consisting of a T cell, a Natural Killer (NK) cell, and a stem cell from which lymphoid cells may be differentiated.

52. The cell of any one of claims 41-51, wherein the cell is a T cell.
53. The cell of claim 51 or 52, wherein the T cell is a cytotoxic T lymphocyte (CTL) or a regulatory T cell.
54. The cell of claim 53, wherein the stem cell is a pluripotent stem cell.
- 5 55. The cell of claim 54, wherein the pluripotent stem cell is an embryoid stem cell or an induced pluripotent stem cell.
56. A nucleic acid molecule encoding the antigen-recognizing receptor of any one of claims 1-40.
57. The nucleic acid molecule of claim 56, wherein the nucleic acid molecule comprises
10 the nucleotide sequence set forth in SEQ ID NO: 22, SEQ ID NO: 23, SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, or SEQ ID NO: 27.
58. The nucleic acid molecule of claim 56 or 57, wherein the nucleic acid molecule comprises the nucleotide sequence set forth in SEQ ID NO: 22.
59. A vector comprising the nucleic acid molecule of any one of claims 56-58.
- 15 60. The vector of claim 59, wherein the vector is a γ -retroviral vector.
61. A host cell expressing the nucleic acid molecule of any one of claims 56-58.
62. The host cell of claim 61, wherein the host cell is a T cell.
63. A composition comprising the cell of any one of claims 41-55.
64. The composition of claim 63, which is a pharmaceutical composition further
20 comprising a pharmaceutically acceptable carrier.
65. Use of~~A method of reducing tumor burden in a subject, comprising administering~~ an effective amount of the cell of any one of claims 41-55 or the composition of claim 63 or 64 in the manufacture of a medicament for reducing tumor burden in a subject, wherein an

effective amount of the cell of any one of claims 41-55 or the composition of claim 63 or 64 is to be administered to the subject.

66. The ~~use~~~~method~~ of claim 65, wherein the medicament~~method~~ reduces the number of tumor cells, reduces tumor size, and/or eradicates the tumor in the subject

5 67. ~~Use of A method of increasing or lengthening survival of a subject having a tumor or neoplasm, comprising administering~~ an effective amount of the cell of any one of claims 41-55 or the composition of claim 63 or 64 in the manufacture of a medicament for increasing or lengthening survival of a subject having a tumor or neoplasm, wherein an effective amount of the cell of any one of claims 41-55 or the composition of claim 63 or 64 is to be
10 administered to the subject.

68. ~~Use of A method of treating and/or preventing a tumor or neoplasm in a subject, comprising administering~~ an effective amount of the cell of any one of claims 41-55 or the composition of claim 63 or 64 in the manufacture of a medicament for treating and/or preventing tumor or neoplasm in a subject, wherein an effective amount of the cell of any
15 one of claims 41-55 or the composition of claim 63 or 64 is to be administered to the subject.

69. The ~~use~~~~method~~ of any one of claims 65-68, wherein the tumor or neoplasm is selected from the group consisting of acute myeloid leukemia (AML), multiple myeloma, Non-Hodgkin's Lymphoma, Hodgkin's Lymphoma, Chronic Lymphocytic Leukemia (CLL), glioblastoma, myelodysplastic syndrome (MDS), and chronic myelogenous leukemia (CML).

20 70. The ~~use~~~~method~~ of any one of claims 65-69, wherein the tumor or neoplasm is acute myeloid leukemia (AML).

71. A method for producing a cell comprising an antigen-recognizing receptor of any one of claims 1-40, comprising introducing into the cell a nucleic acid molecule that encodes the antigen-recognizing receptor.

25 72. A kit for reducing tumor burden in a subject, treating and/or preventing a tumor or neoplasm in a subject, and/or increasing or lengthening survival of a subject having a tumor or neoplasm, comprising the cell of any one of claims 41-55.

73. The kit of claim 72, wherein the kit further comprises written instructions for using the cell for reducing tumor burden in a subject, treating and/or preventing a tumor or neoplasm in a subject, and/or increasing or lengthening survival of a subject having a tumor or neoplasm.

5 74. The cell of any one of claims 41-55 or the composition of claim 63 or 64 for use in therapy.