

WHAT IS CLAIMED IS:

1. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising a heavy chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% 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.
2. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising a light chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% 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.
3. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising
 - (a) a heavy chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% 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; and
 - (b) a light chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99% at least about 100% 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.
4. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region and the light chain variable region are selected from the group consisting of:
 - (a) a heavy chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100%

homologous or identical to the amino acid sequence set forth in SEQ ID NO:1, and a light chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO:2;

(b) a heavy chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 3, and a light chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 4;

(c) a heavy chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 5, and a light chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO:6;

(d) a heavy chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 7, and a light chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 8;

(e) a heavy chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 9, and a

light chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 10; and

(f) a heavy chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 11, and a light chain variable region comprising an amino acid sequence that is at least about 80%, at least about 85%, at least about 90%, at least about 95%, at least about 96%, at least about 97%, at least about 98%, at least about 99%, at least about 100% homologous or identical to the amino acid sequence set forth in SEQ ID NO: 12.

5. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising 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.

6. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising 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.

7. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising
(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.

8. The antibody or antigen-binding fragment thereof of any one of claims 1-7, comprising:

(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; and

(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.

9. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising a heavy chain variable region that comprises CDR1, CDR2, and CDR3 domains; and a light chain variable region that comprises CDR1, CDR2, and CDR3 domains, wherein the heavy chain variable region and light chain variable region CDR3 domains are selected from:

(a) a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 30 and a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 33 and a conservative modification thereof;

(b) a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 36 and a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 39 and a conservative modification thereof;

(c) a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 42 and a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 45 and a conservative modification thereof;

(d) a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 48 and a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 51 and a conservative modification thereof;

(e) a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 54 and a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 57 and a conservative modification thereof; and

(f) a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 60 and a conservative modification thereof; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 63 and a conservative modification thereof.

10. The antibody or antigen-binding fragment thereof of claim 9, wherein the heavy chain variable region and light chain variable region CDR2 domains are selected from:

(a) a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 29 and a conservative modification thereof; and a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 32 and a conservative modification thereof;

(b) a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 35 and a conservative modification thereof; and a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 38 and a conservative modification thereof;

(c) a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 41 and a conservative modification thereof; and a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 44 and a conservative modification thereof;

(d) a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 47 and a conservative modification thereof; and a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 50 and a conservative modification thereof;

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

variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 56 and a conservative modification thereof; and

(f) a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 59 and a conservative modification thereof; and a light chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 62 and a conservative modification thereof.

11. The antibody or antigen-binding fragment thereof of claim 9 or 10, wherein the heavy chain variable region and light chain variable region CDR1 domains are selected from:

(a) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 28 and a conservative modification thereof; and a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 31 and a conservative modification thereof;

(b) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 34 and a conservative modification thereof; and a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 37 and a conservative modification thereof;

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

(d) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 46 and a conservative modification thereof; and a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 49 and a conservative modification thereof;

(e) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 52 and a conservative modification thereof; and a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 55 and a conservative modification thereof; and

(f) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 58 and a conservative modification thereof; and a light chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 61 and a conservative modification thereof.

12. The antibody or antigen-binding fragment thereof of any one of claims 9-11, wherein one or more of the CDR sequences have up to about 5 amino acid substitutions.
13. The antibody or antigen-binding fragment thereof of any one of claims 9-11, wherein one or more of the CDR sequences have up to about 3 amino acid substitutions.
14. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising:
- (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; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 30;
 - (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; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 36;
 - (c) a heavy chain variable region CDR1 comprising the amino acid sequence set forth in SEQ ID NO: 40; a heavy chain variable region CDR2 comprising the amino acid sequence set forth in SEQ ID NO: 41; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 42;
 - (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; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 48;
 - (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; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 54, 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; and a heavy chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 60.
15. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising:
- (a) 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 NO: 32; and a light chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 33;

(b) 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: 38;

(c) 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 chain variable region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 45;

(d) 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;

(e) 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 region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 57, or

(f) a light chain variable region CDR1 comprising the 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.

16. An anti-CD371 antibody or an antigen-binding fragment thereof, comprising:

(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 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 an amino acid

sequence set forth in SEQ ID NO: 35; a heavy chain variable region CDR3 comprising the amino acid 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 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 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 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;

(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 region CDR3 comprising the amino acid sequence set forth in SEQ ID NO: 57; or

(f) 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 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.

17. The antibody or antigen-binding fragment thereof of any one of claims 1-16, wherein the antibody or antigen-binding fragment thereof binds to a CD371 comprising the amino acid sequence set forth in SEQ ID NO: 15 or a fragment thereof.

18. An antibody or an antigen-binding fragment thereof, which cross-competes for binding to CD371 with an antibody or an antigen-binding fragment thereof of any one of claims 1-17.

19. An antibody or an antigen-binding fragment thereof, which binds to the same epitope on CD371 with an antibody or an antigen-binding fragment thereof of any one of claims 1-17.

20. The antibody or antigen-binding fragment thereof of any one of claims 1-19, wherein the sequence of the antibody is in a light-heavy variable chain orientation (V_L - V_H).

21. The antibody or antigen-binding fragment thereof of any one of claims 1-20, wherein the antibody or antigen-binding fragment thereof binds to human CD371 with a dissociation constant (K_D) of between about 1×10^{-7} M and about 1×10^{-8} M or between about 1×10^{-9} M and about 1×10^{-8} M.

22. An antibody or an antigen-binding fragment thereof, comprising the amino acid sequence set forth in SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, SEQ ID NO: 19, SEQ ID NO: 20, or SEQ ID NO: 21.

23. The antibody or antigen-binding fragment thereof of any one of claims 1-22, wherein the antibody comprises a human variable region framework region.

24. The antibody or antigen-binding fragment thereof of any one of claims 1-23, which is a fully human or an antigen-binding fragment thereof.

25. The antibody or antigen-binding fragment thereof of any one of claims 1-23, which is a chimeric antibody or an antigen-binding fragment thereof.
26. The antibody or antigen-binding portion thereof of any one of claims 1-23, which is a humanized antibody or an antigen-binding fragment thereof.
27. The antibody or antigen-binding fragment thereof of any one of claims 1-26, wherein the antigen-binding fragment of the antibody is a Fab, Fab', F(ab')₂, variable fragment (Fv), or single chain variable region (scFv).
28. A composition comprising the antibody or antigen-binding fragment thereof of any one of claims 1-27.
29. The composition of claim 28, which is a pharmaceutical composition that further comprises a pharmaceutically acceptable carrier.
30. An immunoconjugate comprising the antibody or antigen-binding fragment thereof of any one of claims 1-27, linked to a therapeutic agent.
31. The immunoconjugate of claim 30, wherein said therapeutic agent is a drug, a cytotoxin, or a radioactive isotope.
32. A composition comprising the immunoconjugate of claim 30 or 31.
33. The composition of claim 32, which is a pharmaceutical composition that further comprises a pharmaceutically acceptable carrier.
34. A bispecific molecule comprising the antibody or antigen-binding fragment thereof of any one of claims 1-27, linked to a second functional moiety.
35. The bispecific molecule of claim 34, wherein the second functional moiety has a different binding specificity than said antibody or antigen binding fragment thereof.
36. A composition comprising the bispecific molecule of claim 34 or 35.
37. The composition of claim 36, which is a pharmaceutical composition that further comprises a pharmaceutically acceptable carrier.

38. A nucleic acid that encodes an antibody or antigen-binding fragment thereof of any one of claims 1-27.
39. An expression vector comprising the nucleic acid molecule of claim 38.
40. A host cell comprising the expression vector of claim 39.
41. A method for detecting CD371 in a whole cell or tissue, comprising:
contacting a cell or tissue with the antibody or antigen-binding fragment thereof of any one of claims 1-27, wherein said antibody or antigen-binding fragment thereof comprises a detectable label; and
determining the amount of the labeled antibody or antigen-binding fragment thereof bound to said cell or tissue by measuring the amount of detectable label associated with said cell or tissue, wherein the amount of bound antibody or antigen-binding fragment thereof indicates the amount of CD371 in said cell or tissue.
42. A method of reducing tumor burden in a subject, comprising administering to the subject an antibody or antigen-binding fragment thereof of any one of claims 1-27, the immunoconjugate of claim 30 or 31, the bispecific molecule of claim 34 or 35, or the composition of any one of claims 28, 29, 32, 33, 36, and 37.
43. The method of claim 42, wherein the method reduces the number of the tumor cells, reduces the tumor size, and/or eradicates the tumor in the subject.
44. A method of treating and/or preventing a tumor or neoplasm in a subject, comprising administering to the subject an antibody or antigen-binding fragment thereof of any one of claims 1-27, the immunoconjugate of claim 30 or 31, the bispecific molecule of claim 34 or 35, or the composition of any one of claims 28, 29, 32, 33, 36, and 37.
45. A method of increasing or lengthening survival of a subject having a tumor or neoplasm, comprising administering to the subject an antibody or antigen-binding fragment thereof of any one of claims 1-27, the immunoconjugate of claim 30 or 31, the bispecific molecule of claim 34 or 35, or the composition of any one of claims 28, 29, 32, 33, 36, and 37.

46. The method of claim 45, wherein the method can reduce or eradicate tumor burden in the subject.
47. The method of any one of claims 42-46, wherein the tumor or neoplasm is selected from acute myeloid leukemia (AML), multiple myeloma, Non-Hodgkin Lymphoma, Hodgkin Lymphoma, Chronic Lymphocytic Leukemia (CLL), glioblastoma, myelodysplastic syndrome (MDS), and chronic myelogenous leukemia (CML).
48. The method of any one of claims 42-47, wherein the tumor or neoplasm is AML.
49. The method of any one of claims 42-48, wherein the subject is a human.
50. 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 antibody or antigen-binding fragment thereof of any one of claims 1-27.
51. The kit of claim 50, wherein the kit further comprises written instructions for using the antibody or antigen-binding fragment thereof for 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.