

compared to MMAE, namely inhibiting topoisomerase I rather than disrupting microtubules. Unlike MMAE, camptothecin-based therapies do not cause peripheral neuropathy clinically.

[0008] T regulatory cells (Tregs) are essential modulators of T cell immune responses, limiting chronic inflammation and protecting normal tissues from autoimmunity. T regulatory cells are also implicated in maintaining immune-suppressive conditions in the tumor microenvironment, abrogating cytotoxic anti-tumor immunosurveillance. Analysis of clinical tumor samples has shown increased densities of intratumoral Tregs associated with poor clinical outcomes in a number of cancer types (Fridman, 2012, Nature Reviews Cancer; Charoentong, 2017, Cell Reports 18: 248-262). Recent transcriptomic analyses of intratumoral Tregs isolated from breast, lung, and colorectal cancer tissues showed TNFSFR8 (CD30) to be among transcripts differentially upregulated compared to Tregs isolated from adjacent normal tissue and circulating in blood (Plitas, 2016, Immunity, 45: 1122-1134; De Simone, 2016, Immunity, 45: 1135-1147). The functional significance of heightened CD30 transcript expression in Tregs remains unclear. Given the protective role of Tregs in promoting immune homeostasis in normal tissues, there is considerable interest in developing cancer therapeutics that preferentially target intratumoral Tregs, while sparing those in non-diseased tissues. Therefore, there appears to be a need for therapies that can selectively control the activity of immune cells that are involved in pathogenesis of cancer, such as the activity of T regulatory cells.

[0009] All references cited herein, including patent applications, patent publications, and scientific literature, are herein incorporated by reference in their entirety, as if each individual reference were specifically and individually indicated to be incorporated by reference.

SUMMARY

[0010] In one aspect, the present disclosure provides a use of an antibody-drug conjugate that binds to CD30 in the manufacture of a medicament for decreasing the number of CD30⁺ T regulatory (Treg) cells in a subject, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated a camptothecin or a functional analog thereof or a functional derivative thereof. In another aspect, the present disclosure provides a pharmaceutical composition for use in the treatment of cancer in a subject, the

composition comprising an antibody-drug conjugate that binds to CD30, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof. In another aspect, the present disclosure provides a kit comprising an antibody-drug conjugate that binds to CD30, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof, and instructions for using the kit to treat cancer in a subject.

[0010a] Provided herein is a method of decreasing the number of CD30⁺ T regulatory (Treg) cells in a subject comprising administering to the subject an antibody-drug conjugate, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated a camptothecin or a functional analog thereof or a functional derivative thereof. In some examples, the number of CD30⁺ Treg cells is decreased relative to the number of CD30⁺ Treg cells in the subject prior to administration of the antibody-drug conjugate.

In some examples, the decrease in the activity of CD30⁺ Treg cells is relative to the activity of CD30⁺ Treg cells in the subject prior to administration of the antibody-drug conjugate. In some examples, the CD30⁺ Treg cells are inducible T regulatory (iTreg) cells. In some examples, the CD30⁺ Treg cells are peripheral blood T regulatory (pbTreg) cells. In some examples, the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

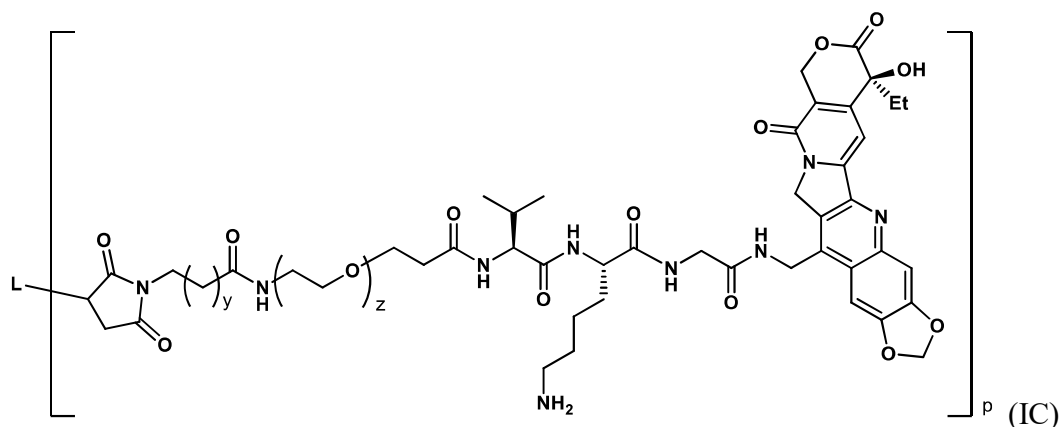
- (i) a CDR-H1 comprising the amino acid sequence of SEQ ID NO: 1;
- (ii) a CDR-H2 comprising the amino acid sequence of SEQ ID NO: 2; and
- (iii) a CDR-H3 comprising the amino acid sequence of SEQ ID NO: 3; and

wherein the light chain variable region comprises:

- (i) a CDR-L1 comprising the amino acid sequence of SEQ ID NO: 4;
- (ii) a CDR-L2 comprising the amino acid sequence of SEQ ID NO: 5; and
- (iii) a CDR-L3 comprising the amino acid sequence of SEQ ID NO: 6. In some

examples, the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region comprising an amino acid sequence at least 85% identical to the amino acid sequence of SEQ ID NO: 7 and a light chain variable region comprising an amino acid sequence at least 85% identical to the amino acid sequence of SEQ ID NO: 8. In some examples, the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region comprising an amino acid sequence at least 90% identical to the amino acid sequence of SEQ ID NO: 7 and a light chain variable region comprising an amino acid sequence at least 90% identical to the amino acid sequence of SEQ ID NO: 8. In some examples, the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region comprising an amino acid sequence at least 95% identical to the amino acid sequence of SEQ ID NO: 7 and a light chain variable region comprising an amino acid sequence at least 95% identical to the amino acid sequence of SEQ ID NO: 8. In some examples, the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region comprising the amino acid sequence of SEQ ID NO: 7 and a light chain variable region comprising the amino acid sequence of SEQ ID NO: 8. In some examples, the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate is cAC10. In

some examples, the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof forming a camptothecin conjugate of Formula (IC):



or a pharmaceutically acceptable salt thereof, wherein:

L is the anti-CD30 antibody or an antigen-binding fragment thereof,

y is 1, 2, 3, or 4, or is 1 or 4,

z is an integer from 2 to 12, or is 2, 4, 8, or 12, and

p is 1-16, or is 2, 3, 4, 5, 6, 7, 8, 9, or 10, or is 2, 4 or 8. In some examples, y is 1. In some examples, z is 8. In some examples, p is 8. In some examples, the antibody-drug conjugate is SGN-CD30C. In some examples, the antibody-drug conjugate is administered at a dose of 0.01 mg/kg to 5 mg/kg of the subject's bodyweight. In some examples, the antibody-drug conjugate is administered at a dose of 0.1 mg/kg to 2 mg/kg of the subject's bodyweight. In some examples, the antibody-drug conjugate is administered at a dose of about 0.1 mg/kg of the subject's bodyweight. In some examples, the antibody-drug conjugate is administered at a dose of about 0.5 mg/kg of the subject's bodyweight. In some examples, the antibody-drug conjugate is administered to the subject once about every 3 weeks. In some examples, the antibody-drug conjugate is administered to the subject once every 3 weeks. In some examples, the antibody-drug conjugate is administered to the subject on about day 1 of about a 21-day treatment cycle. In some examples, the antibody-drug conjugate is administered to the subject on day 1 of a 21-day treatment cycle. In some examples, the antibody-drug conjugate is administered by intravenous infusion. In some examples, the method further comprises the administration of granulocyte-colony stimulating

factor (G-CSF) to the subject. In some examples, the G-CSF is administered 1 to 3 days after the administration of the antibody-drug conjugate. In some examples, the G-CSF is selected from the group consisting of filgrastim, PEG-filgrastim, lenograstim, and tbo-filgrastim. In some examples, the method further comprises administering one or more additional therapeutic agents capable of modulating the immune response. In some examples, the subject has cancer. In some examples, the cancer is a hematologic cancer. In some examples, the cancer is selected from the group consisting of Hodgkin lymphoma, non-Hodgkin lymphoma, anaplastic large cell lymphoma, peripheral T-cell lymphoma, or mycosis fungoides. In some examples, the cancer is Hodgkin lymphoma. In some examples, the Hodgkin lymphoma is classical Hodgkin lymphoma (cHL). In some examples, the cancer is non-Hodgkin lymphoma. In some examples, the non-Hodgkin lymphoma is diffuse large B-cell lymphoma (DLBCL). In some examples, the DLBCL is germinal-center B-cell like (GCB). In some examples, the DLBCL is non-GCB. In some examples, the cancer is anaplastic large cell lymphoma. In some examples, the anaplastic large cell lymphoma is systemic anaplastic large cell lymphoma. In some examples, the anaplastic large cell lymphoma is primary cutaneous anaplastic large cell lymphoma. In some examples, the non-Hodgkin lymphoma is a mature T-cell lymphoma. In some examples, the non-Hodgkin lymphoma is cutaneous T-cell lymphoma (CTCL). In some examples, the cancer is peripheral T-cell lymphoma. In some examples, the peripheral T-cell lymphoma is angioimmunoblastic T-cell lymphoma. In some examples, the cancer is mycosis fungoides. In some examples, the cancer is a non-hematologic cancer. In some examples, the non-hematologic cancer is a carcinoma. In some examples, the non-hematologic cancer is a sarcoma. In some examples, the non-hematologic cancer is a solid tumor. In some examples, the cancer is a CD30+ cancer, while in other examples, the cancer is a CD30- cancer. In some examples, the cancer is an advanced stage cancer. In some examples, the advanced stage cancer is a stage 3 or stage 4 cancer. In some examples, the advanced stage cancer is metastatic cancer. In some examples, the subject has been previously treated with one or more therapeutic agents and did not respond to the treatment. In some examples, the subject has been previously treated with one or more therapeutic agents and relapsed after the treatment. In some examples, the subject has been previously treated with one or more therapeutic agents and has experienced disease progression during treatment. In some examples, the subject has previously received

allogenic stem cell transplant to treat the cancer. In some examples, the subject has previously received autologous stem cell transplant to treat the cancer. In some examples, the subject relapsed following stem cell transplant. In some examples, the subject has previously received CAR-T therapy. In some examples, the cancer is recurrent cancer. In some examples, the subject has not previously been treated for the cancer. In some examples, the subject has not been previously treated with an antibody-drug conjugate that binds to CD30. In some examples, at least 1% of the cancer cells in the subject express CD30. In some examples, administering the antibody-drug conjugate to the subject results in a depletion of cancer cells by at least about 5%, at least about 6%, at least about 7%, at least about 8%, at least about 9%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, at least about 95%, or about 100% compared to the amount of cancer cells before administering the antibody-drug conjugate to the subject. In some examples, one or more therapeutic effects in the subject is improved after administration of the antibody-drug conjugate relative to a baseline. In some examples, the one or more therapeutic effects is selected from the group consisting of: objective response rate, duration of response, time to response, progression free survival and overall survival. In some examples, the objective response rate is at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, or at least about 80%. In some examples, the subject exhibits progression-free survival of at least about 1 month, at least about 2 months, at least about 3 months, at least about 4 months, at least about 5 months, at least about 6 months, at least about 7 months, at least about 8 months, at least about 9 months, at least about 10 months, at least about 11 months, at least about 12 months, at least about eighteen months, at least about two years, at least about three years, at least about four years, or at least about five years after administration of the antibody-drug conjugate. In some examples, the subject exhibits overall survival of at least about 1 month, at least about 2 months, at least about 3 months, at least about 4 months, at least about 5 months, at least about 6 months, at least about 7 months, at least about 8 months, at least about 9 months, at least about 10 months, at least about 11 months, at least about 12 months, at least about eighteen months, at least about two years, at least about three years, at least about four years, or at least about five years after

administration of the antibody-drug conjugate. In some examples, the duration of response to the conjugate is at least about 1 month, at least about 2 months, at least about 3 months, at least about 4 months, at least about 5 months, at least about 6 months, at least about 7 months, at least about 8 months, at least about 9 months, at least about 10 months, at least about 11 months, at least about 12 months, at least about eighteen months, at least about two years, at least about three years, at least about four years, or at least about five years after administration of the antibody-drug conjugate. In some examples, the subject is a human.

[0011] Also provided herein is a pharmaceutical composition an antibody-drug conjugate that binds to CD30, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof, wherein the composition is for use in the method of any of the examples herein.

[0012] Also provided herein is a kit comprising an antibody-drug conjugate that binds to CD30, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof, and instructions for using the kit in the method of any of the examples herein.

[0013] It is to be understood that one, some, or all of the properties of the various examples described herein may be combined to form other examples of the present disclosure. These and other examples of the disclosure will become apparent to one of skill in the art. These and other examples of the disclosure are further described by the detailed description that follows.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. 1A-1B is a series of graphs showing the ability of SGN-CD30C to deplete CD30+ Tregs *in vitro*. SGN-CD30C depleted total CD30+ Tregs (FIG. 1A), and peripheral blood CD30+ Tregs (FIG. 1B). CD30+ Treg counts are shown as a percent of control. hIgG-7782 is a non-binding control antibody-drug conjugate.

CLAIMS

We claim:

1. Use of an antibody-drug conjugate that binds to CD30 in the manufacture of a medicament for decreasing the number of CD30⁺ T regulatory (Treg) cells in a subject, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated a camptothecin or a functional analog thereof or a functional derivative thereof.
2. The use of claim 1, wherein the number of CD30⁺ Treg cells is decreased relative to the number of CD30⁺ Treg cells in the subject prior to administration of the antibody-drug conjugate.
3. Use of an antibody-drug conjugate that binds to CD30 in the manufacture of a medicament for decreasing the activity of CD30⁺ T regulatory (Treg) cells in a subject, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated a camptothecin or a functional analog thereof or a functional derivative thereof.
4. The use of claim 3, wherein the decrease in the activity of CD30⁺ Treg cells is relative to the activity of CD30⁺ Treg cells in the subject prior to administration of the antibody-drug conjugate.
5. The use of any one of claims 1-4, wherein the CD30⁺ Treg cells are inducible T regulatory (iTreg) cells.
6. The use of any one of claims 1-4, wherein the CD30⁺ Treg cells are peripheral blood T regulatory (pbTreg) cells.

7. The use of any one of claims 1-6, wherein the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region and a light chain variable region, wherein the heavy chain variable region comprises:

- (i) a CDR-H1 comprising the amino acid sequence of SEQ ID NO: 1;
- (ii) a CDR-H2 comprising the amino acid sequence of SEQ ID NO: 2; and
- (iii) a CDR-H3 comprising the amino acid sequence of SEQ ID NO: 3; and

wherein the light chain variable region comprises:

- (i) a CDR-L1 comprising the amino acid sequence of SEQ ID NO: 4;
- (ii) a CDR-L2 comprising the amino acid sequence of SEQ ID NO: 5; and
- (iii) a CDR-L3 comprising the amino acid sequence of SEQ ID NO: 6.

8. The use of claim 7, wherein the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region comprising an amino acid sequence at least 85% identical to the amino acid sequence of SEQ ID NO: 7 and a light chain variable region comprising an amino acid sequence at least 85% identical to the amino acid sequence of SEQ ID NO: 8.

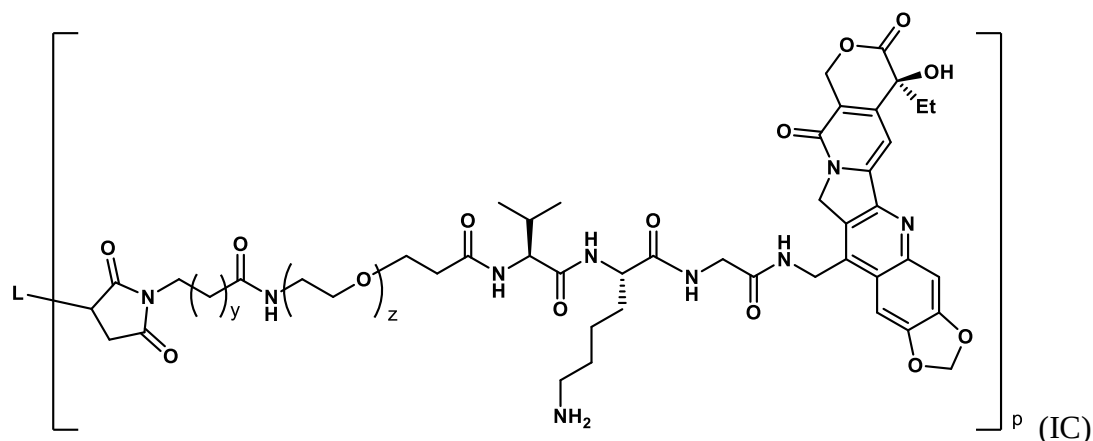
9. The use of claim 7, wherein the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region comprising an amino acid sequence at least 90% identical to the amino acid sequence of SEQ ID NO: 7 and a light chain variable region comprising an amino acid sequence at least 90% identical to the amino acid sequence of SEQ ID NO: 8.

10. The use of claim 7, wherein the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region comprising an amino acid sequence at least 95% identical to the amino acid sequence of SEQ ID NO: 7 and a light chain variable region comprising an amino acid sequence at least 95% identical to the amino acid sequence of SEQ ID NO: 8.

11. The use of any one of claims 1-6, wherein the anti-CD30 antibody or antigen-binding fragment thereof of the antibody-drug conjugate comprises a heavy chain variable region

comprising the amino acid sequence of SEQ ID NO: 7 and a light chain variable region comprising the amino acid sequence of SEQ ID NO: 8.

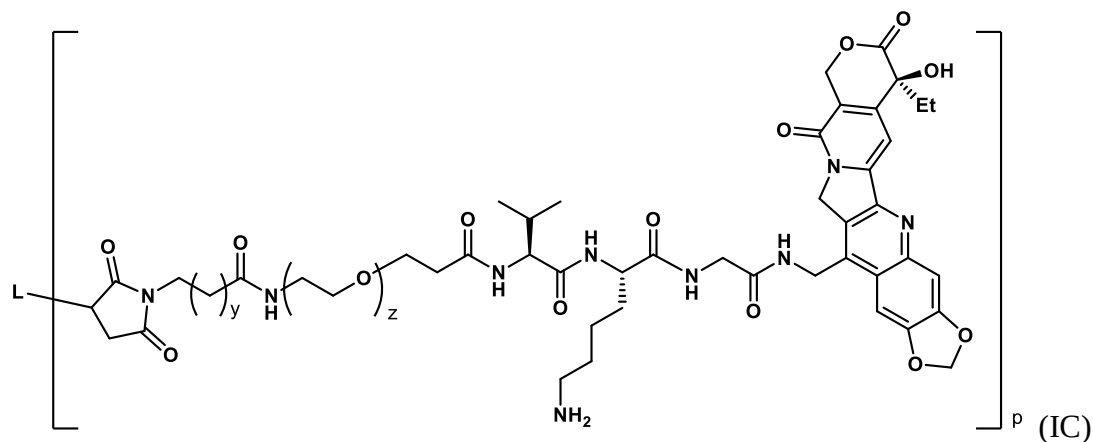
12. The use of any one of claims 1-11, wherein the anti-CD30 antibody or antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof forming a camptothecin conjugate of Formula (IC):



or a pharmaceutically acceptable salt thereof, wherein:

L is the anti-CD30 antibody or an antigen-binding fragment thereof,
y is 1, z is 8, and p is 8.

13. The use of any one of claims 1-11, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof forming a camptothecin conjugate of Formula (IC):



or a pharmaceutically acceptable salt thereof, wherein:

L is the anti-CD30 antibody or an antigen-binding fragment thereof,

y is 1, 2, 3, or 4,

z is an integer from 2 to 12, and

p is 1-16.

14. The use of claim 13, wherein y is 1.

15. The use of claim 13 or claim 14, wherein z is 8.

16. The use of any one of claims 1-15, wherein p is 8.

17. The use of claim 16, wherein the antibody-drug conjugate is SGN-CD30C.

18. The use of any one of claims 1-17, wherein the antibody-drug conjugate is to be administered at a dose of 0.01 mg/kg to 5 mg/kg of the subject's bodyweight.

19. The use of claim 18, wherein the antibody-drug conjugate is to be administered at a dose of 0.1 mg/kg to 2 mg/kg of the subject's bodyweight.

20. The use of claim 18, wherein the antibody-drug conjugate is to be administered at a dose of about 0.1 mg/kg of the subject's bodyweight.

21. The use of claim 18, wherein the antibody-drug conjugate is to be administered at a dose of about 0.5 mg/kg of the subject's bodyweight.

22. The use of any one of claims 1-21, wherein the antibody-drug conjugate is to be administered to the subject once about every 3 weeks.

23. The use of claim 22, wherein the antibody-drug conjugate is to be administered to the subject once every 3 weeks.

24. The use of claim 22, wherein the antibody-drug conjugate is to be administered to the subject on about day 1 of about a 21-day treatment cycle.
25. The use of claim 22, wherein the antibody-drug conjugate is to be administered to the subject on day 1 of a 21-day treatment cycle.
26. The use of any one of claims 1-25, wherein the antibody-drug conjugate is to be administered by intravenous infusion.
27. The use of any one of claims 1-26, further comprising that granulocyte-colony stimulating factor (G-CSF) is to be administered to the subject.
28. The use of claim 27, wherein the G-CSF is to be administered 1 to 3 days after the administration of the antibody-drug conjugate.
29. The use of claim 27 or claim 28, wherein the G-CSF is selected from the group consisting of filgrastim, PEG-filgrastim, lenograstim, and tbo-filgrastim.
30. The use of any one of claims 1-29, further comprising that one or more additional therapeutic agents capable of modulating the immune response is to be administered.
31. The use of any one of claims 1-30, wherein the subject has cancer.
32. The use of claim 31, wherein the cancer is a hematologic cancer.
33. The use of claim 31, wherein the cancer is selected from the group consisting of Hodgkin lymphoma, non-Hodgkin lymphoma, anaplastic large cell lymphoma, peripheral T-cell lymphoma, or mycosis fungoides.
34. The use of claim 33, wherein the cancer is Hodgkin lymphoma.

35. The use of claim 34, wherein the Hodgkin lymphoma is classical Hodgkin lymphoma (cHL).
36. The use of claim 33, wherein the cancer is non-Hodgkin lymphoma.
37. The use of claim 36, wherein the non-Hodgkin lymphoma is diffuse large B-cell lymphoma (DLBCL).
38. The use of claim 37, wherein the DLBCL is germinal-center B-cell like (GCB).
39. The use of claim 37, wherein the DLBCL is non-GCB.
40. The use of claim 33, wherein the cancer is anaplastic large cell lymphoma.
41. The use of claim 40, wherein the anaplastic large cell lymphoma is systemic anaplastic large cell lymphoma.
42. The use of claim 40, wherein the anaplastic large cell lymphoma is primary cutaneous anaplastic large cell lymphoma.
43. The use of claim 36, wherein the non-Hodgkin lymphoma is a mature T-cell lymphoma.
44. The use of claim 36, wherein the non-Hodgkin lymphoma is cutaneous T-cell lymphoma (CTCL).
45. The use of claim 33, wherein the cancer is peripheral T-cell lymphoma.
46. The use of claim 45, wherein the peripheral T-cell lymphoma is angioimmunoblastic T-cell lymphoma.
47. The use of claim 33, wherein the cancer is mycosis fungoides.

48. The use of claim 31, wherein the cancer is a non-hematologic cancer.
49. The use of claim 48, wherein the non-hematologic cancer is a carcinoma.
50. The use of claim 48, wherein the non-hematologic cancer is a sarcoma.
51. The use of claim 48, wherein the non-hematologic cancer is a solid tumor.
52. The use of any one of claims 31-51, wherein the cancer is an advanced stage cancer.
53. The use of claim 52, wherein the advanced stage cancer is a stage 3 or stage 4 cancer.
54. The use of claim 52, wherein the advanced stage cancer is metastatic cancer.
55. The use of any one of claims 31-54, wherein the subject has been previously treated with one or more therapeutic agents and did not respond to the treatment.
56. The use of any one of claims 31-54, wherein the subject has been previously treated with one or more therapeutic agents and relapsed after the treatment.
57. The use of any one of claims 31-54, wherein the subject has been previously treated with one or more therapeutic agents and has experienced disease progression during treatment.
58. The use of any one of claims 31-57, wherein the subject has previously received allogenic stem cell transplant to treat the cancer.
59. The use of any one of claims 31-57, wherein the subject has previously received autologous stem cell transplant to treat the cancer.
60. The use of claim 58 or claim 59, wherein the subject relapsed following the stem cell transplant.

61. The use of any one of claims 31-60, wherein the subject has previously received CAR-T therapy.
62. The use of claim 61, wherein the subject relapsed after CAR-T therapy.
63. The use of any one of claims 31-62, wherein the cancer is recurrent cancer.
64. The use of any one of claims 31-54, wherein the subject has not previously been treated for the cancer.
65. The use of any one of claims 31-64, wherein the subject has not been previously treated with an antibody-drug conjugate that binds to CD30.
66. The use of any one of claims 31-65, wherein at least 1% of the cancer cells in the subject express CD30.
67. The use of any one of claims 48-65, wherein the cancer is a CD30- cancer.
68. The use of any one of claims 31-67, wherein administration of the antibody-drug conjugate to the subject results in a depletion of cancer cells by at least about 5%, at least about 6%, at least about 7%, at least about 8%, at least about 9%, at least about 10%, at least about 15%, at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, at least about 80%, at least about 90%, at least about 95%, or about 100% compared to the amount of cancer cells before administration of the antibody-drug conjugate to the subject.
69. The use of any one of claims 31-68, wherein one or more therapeutic effects in the subject is improved after administration of the antibody-drug conjugate relative to a baseline.

70. The use of claim 69, wherein the one or more therapeutic effects is selected from the group consisting of: objective response rate, duration of response, time to response, progression free survival and overall survival.

71. The use of claim 70, wherein the objective response rate is at least about 20%, at least about 25%, at least about 30%, at least about 35%, at least about 40%, at least about 45%, at least about 50%, at least about 60%, at least about 70%, or at least about 80%.

72. The use of claim 70, wherein the subject exhibits progression-free survival of at least about 1 month, at least about 2 months, at least about 3 months, at least about 4 months, at least about 5 months, at least about 6 months, at least about 7 months, at least about 8 months, at least about 9 months, at least about 10 months, at least about 11 months, at least about 12 months, at least about eighteen months, at least about two years, at least about three years, at least about four years, or at least about five years after administration of the antibody-drug conjugate.

73. The use of claim 70, wherein the subject exhibits overall survival of at least about 1 month, at least about 2 months, at least about 3 months, at least about 4 months, at least about 5 months, at least about 6 months, at least about 7 months, at least about 8 months, at least about 9 months, at least about 10 months, at least about 11 months, at least about 12 months, at least about eighteen months, at least about two years, at least about three years, at least about four years, or at least about five years after administration of the antibody-drug conjugate.

74. The use of claim 70, wherein the duration of response to the conjugate is at least about 1 month, at least about 2 months, at least about 3 months, at least about 4 months, at least about 5 months, at least about 6 months, at least about 7 months, at least about 8 months, at least about 9 months, at least about 10 months, at least about 11 months, at least about 12 months, at least about eighteen months, at least about two years, at least about three years, at least about four years, or at least about five years after administration of the antibody-drug conjugate.

75. The use of any one of claims 1-74, wherein the subject is a human.

76. A pharmaceutical composition for use in the treatment of cancer in a subject, the composition comprising an antibody-drug conjugate that binds to CD30, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof.

77. A kit comprising an antibody-drug conjugate that binds to CD30, wherein the antibody-drug conjugate comprises an anti-CD30 antibody or an antigen-binding fragment thereof conjugated to a camptothecin or a functional analog thereof or a functional derivative thereof, and instructions for using the kit to treat cancer in a subject.