CLAIMS

1. An antibody that binds to FLT3 comprising a CDRH1 having the amino acid sequence of SEQ ID NO:23, a CDRH2 having the amino acid sequence of SEQ ID NO:29, a CDRH3 having the amino acid sequence of SEQ ID NO:32, a CDRL1 having the amino acid sequence of SEQ ID NO: 14, a CDRL2 having the amino acid sequence of SEQ ID NO: 17, and a CDRL3 having the amino acid sequence of SEQ ID NO:20.

2. The antibody according to claim 1, wherein the antibody comprises a heavy chain variable region consisting of the amino acid sequence ranging from 1st E to the 123rd S of SEQ ID NO: 11 and comprises a light chain variable region consisting of the amino acid sequence ranging from 1st D to the 108th R of SEQ ID NO: 10.

3. The antibody according to claim 1, wherein the antibody comprises a heavy chain variable region consisting of the amino acid sequence of the heavy chain variable region of an antibody produced by a Chinese Hamster Ovary (CHO) cell deposited under ATCC Accession No. PTA-121831 and comprises a light chain variable region consisting of the amino acid sequence of the light chain of an antibody produced by a Chinese Hamster Ovary (CHO) deposited under ATCC. Accession No. PTA-121831.

4. The antibody according to any one of claims 1 to 3, wherein the antibody comprises an Fc region that is an IgG subtype.

5. The antibody according to any one of claims 1 to 4, wherein the antibody comprises an Fc region comprises a substitution of a non-natural amino acid at amino acid position 124 of the heavy chain, and wherein the non-natural amino acid is para-acetylphenylalanine (pAF).

6. The antibody according to any one of claims 1 to 2, wherein the antibody comprises a heavy chain consisting of the amino acid sequence of amino acid numbers 1st E to the 452nd G of SEQ ID NO: 11 and comprises a light chain consisting of the amino acid sequence ranging from the 1st D to the 214th C of SEQ ID NO: 10.

7. The antibody according to any one of claims 1 to 2, wherein the antibody comprises a heavy chain consisting of the amino acid sequence ranging from 1st E to the 453rd K of SEQ ID NO: 11 and comprises a light chain consisting of the amino acid sequence ranging from 1st D to the 214th C of SEQ ID NO: 10.

8. The antibody according to claim 5, wherein the antibody comprises a heavy chain consisting of the amino acid sequence of the heavy chain of an antibody produced by a Chinese Hamster Ovary (CHO) cell deposited under ATCC. Accession No. PTA-121836, and comprises a light chain consisting of the amino acid sequence of the light chain of an antibody produced by a Chinese Hamster Ovary (CHO) deposited under ATCC. Accession No. PTA-121836.

9. The antibody according to any one of claims 1 to 8, wherein the 1st E of the heavy chain variable region or the heavy chain is substituted with pyroglutamate.

10. The antibody according to claim 6, wherein the antibody comprises a heavy chain consisting of the amino acid sequence ranging from the 1st E to the 452rd G of SEQ ID NO: 11, and wherein the 1st E of the heavy chain variable region or the heavy chain is modified to pyroglutamate, and wherein the antibody comprises a light chain consisting of the amino acid sequence ranging from the 1st D to the 214th C of SEQ ID NO: 10.

11. An antigen-binding fragment comprising the CDRs of the antibodies according to any one of claims 1 to 10, wherein the antigen-binding fragment binds FLT-3.

12. The antigen-binding fragment according to claim 11, wherein the antigen-binding fragment is selected from the group consisting of Fab, Fab', F(ab')$_2$, Fv, scFv, isolated VH, and isolated VL.

13. One or more isolated nucleic acids encoding the antibody or the antigen-binding fragment according to any one of claims 1 to 12.

14. One or more expression vectors comprising the one or more isolated nucleic acids according to claim 13.

15. A recombinant host cell comprising the one or more expression vectors according to claim 14.

16. An antibody or an antigen-binding fragment produced by culturing the recombinant host cell according to claim 15.

17. An antibody drug conjugate comprising the antibody or the antigen-binding fragment according to claim 16 and a therapeutic agent.

18. An antibody drug conjugate comprising the antibody or the antigen-binding fragment according to any one of claims 1 to 12 and a therapeutic agent.

19. The antibody drug conjugate according to any one of claims 17 to18, further comprising a linker joining the antibody or the antigen-binding fragment and the therapeutic agent.

20. The antibody drug conjugate according to claim 19, wherein the linker is a non-cleavable linker.

21. The antibody drug conjugate according to claim 20, wherein the linker is 2-(aminooxy) acetic acid.

22. The antibody drug conjugate of any one claims 17 to 21, wherein the therapeutic agent is (2S,3S)-N-((3R,4S,5S)- l-((S)-2-((1R,2R)-3-(((S)- 1-amino-1-oxo-3-phenylpropan-2-yl)amino)-1-methoxy-2-methyl-3-oxopropyl)pyrrolidin-1-yl)-3-methoxy-5-methyl-1-oxoheptan-4-yl)-3-azido-N-methyl-2-((S)-3-methyl-2-(methylamino)butanamido)butanamide.

23. The antibody drug conjugate of any one of claims 17 to 22, wherein the antibody drug conjugate has the following formula:

Antibody - (Linker - therapeutic agent)p,

wherein the linker is 2-(aminooxy)acetic acid, and wherein the therapeutic agent is (2S,3S)-N-((3R,4S,5S)-1-((S)-2-((1R,2R)-3-(((S)-1-amino-1-oxo-3-phenylpropan-2-yl)amino)-1-methoxy-2-methyl-3-oxopropyl)pyrrolidin-1-yl)-3-methoxy-5-methyl-1-oxoheptan-4-yl)-3-azido-*N*-methyl-2-((S)-3-methyl-2-(methylamino)butanamido)butanamideand wherein p is selected from the group consisting of 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, and 3.

24. A pharmaceutical composition comprising a therapeutically effective amount of the antibody drug conjugate according to any one of claims 17 to 23.

25. The pharmaceutical composition according to claim 24, for use in therapy.

26. The pharmaceutical composition according to claim 25, wherein the use in therapy is the treatment of cancer.

27. The pharmaceutical composition according to any one of claims 24 to 26, further comprising one or more anti-neoplastic agents.

28. The pharmaceutical compositions according to any one of claims 24-27, wherein the cancer comprises one or more cells that express FLT3 at an increased level as compared to a non-cancerous cell.

29. The pharmaceutical compositions according to any one of claims 24 to 28, wherein the cancer is selected from the group consisting of Acute Myeloid leukemia (AML), Acute Lymphoblastic leukemia (ALL), B-cell Lymphoblastic leukemia, and Precursor B-cell Lymphoblastic leukemia.

30. Use of a therapeutically effective amount of an antibody drug conjugate according to any one of claims 17 to 23 or a pharmaceutical composition according to any one of claims 24 to 28, in the manufacture of a medicament for treating cancer in a subject, wherein the medicament is to be administered to the subject.

31. The use according to claim 30, wherein the cancer is selected from the group consisting of Acute Myeloid leukemia (AML), AcuteLymphoblastic leukemia (ALL), B-cell Lymphoblastic leukemia, and Precursor B-cell Lymphoblastic leukemia.