What is claimed is:

1. An anticancer drug for treating non-hematologic cancers, the anticancer drug containing, as an active ingredient thereof, an anti-transmembrane protein 180 (TMEM-180) antibody or an antigen-binding fragment thereof.

2. An anticancer drug for treating non-hematologic cancers, the anticancer drug containing, as an active ingredient thereof, an anti-TMEM-180 antibody having a substance having anticancer activity bound thereto, or an antigen-binding fragment thereof.

3. An anti-TMEM-180 antibody or an antigen-binding fragment thereof for use in therapy.

4. Use of an anti-TMEM-180 antibody or an antigen-binding fragment thereof in the manufacture of a medicament for the treatment of non-hematologic cancers.

5. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: GFSLTRYNVH (SEQ ID NO: 1);

heavy chain CDR2: VIWTGGSTD (SEQ ID NO: 2);

heavy chain CDR3: DLGY (SEQ ID NO: 3);

light chain CDR1: KSSQSLKYRDGKTYLN (SEQ ID NO: 4);

light chain CDR2: QVSKLDS (SEQ ID NO: 5); and

light chain CDR3: CQGSYSPHT (SEQ ID NO: 6).

6. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: GFSLTSYYMQ (SEQ ID NO: 7);

heavy chain CDR2: FIRSGGSTE (SEQ ID NO: 8);

heavy chain CDR3: AFYGGYYFDY (SEQ ID NO: 9);

light chain CDR1: KASQNVGSNVD (SEQ ID NO: 10);

light chain CDR2: KASNRYT (SEQ ID NO: 11); and

light chain CDR3: MQSNTKYT (SEQ ID NO: 12).

7. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: GFTFSDYAMA (SEQ ID NO: 40);

heavy chain CDR2: TIIYDGSST (SEQ ID NO: 41);

heavy chain CDR3: HWYWYFDF (SEQ ID NO: 42);

light chain CDR1: LASEGISNDLA (SEQ ID NO: 43);

light chain CDR2: AASRLQD (SEQ ID NO: 44); and

light chain CDR3: QQSYKYPLT (SEQ ID NO: 45).

8. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated

below:

heavy chain CDR1: DCALN (SEQ ID NO: 48);

heavy chain CDR2: WINTQTGKPTYADDF (SEQ ID NO: 49);

heavy chain CDR3: EDYGYFDY (SEQ ID NO: 50);

light chain CDR1: QASQNINKFIA (SEQ ID NO: 51);

light chain CDR2: YTSTLVS (SEQ ID NO: 52); and

light chain CDR3: LQYDNLR (SEQ ID NO: 53).

9. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: NYGMH (SEQ ID NO: 56);

heavy chain CDR2: SISPSGGSTYYRDSV (SEQ ID NO: 57);

heavy chain CDR3: SASITAYYYVMDA (SEQ ID NO: 58);

light chain CDR1: KASQNVGSNVD (SEQ ID NO: 59);

light chain CDR2: KASNRYT (SEQ ID NO: 60); and

light chain CDR3: MQSNSYPPT (SEQ ID NO: 61).

10. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: NYWMT (SEQ ID NO: 64);

heavy chain CDR2: SITNTGGSTYYPDSV (SEQ ID NO: 65);

heavy chain CDR3: AGYSSYPDYFDY (SEQ ID NO: 66);

light chain CDR1: KAGQNIYNYLA (SEQ ID NO: 67);

light chain CDR2: NANSLQT (SEQ ID NO: 68); and

light chain CDR3: QQYSSGW (SEQ ID NO: 69).

11. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: DYWVS (SEQ ID NO: 72);

heavy chain CDR2: EIYPNSGATNFNENFK (SEQ ID NO: 73);

heavy chain CDR3: DGTMGIAYYFDY (SEQ ID NO: 74);

light chain CDR1: KASQNINRYLN (SEQ ID NO: 75);

light chain CDR2: NANSLQT (SEQ ID NO: 76); and

light chain CDR3: LQHNSWPYT (SEQ ID NO: 77).

12. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: SYDIS (SEQ ID NO: 80);

heavy chain CDR2: AINPGSGGTGYNEKFKGK (SEQ ID NO: 81);

heavy chain CDR3: IHGGYRYWFAY (SEQ ID NO: 82);

light chain CDR1: RASSSVSYMH (SEQ ID NO: 83);

light chain CDR2: DTSKLAS (SEQ ID NO: 84); and

light chain CDR3: LQRSSYPPT (SEQ ID NO: 85).

13. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: SNGVG (SEQ ID NO: 88);

heavy chain CDR2: TIWTGGGTNYNSGVQS (SEQ ID NO: 89);

heavy chain CDR3: EYMGFDY (SEQ ID NO: 90);

light chain CDR1: KASQNVGINVG (SEQ ID NO: 91);

light chain CDR2: WASNRDT (SEQ ID NO: 92); and

light chain CDR3: LQHNSYPRT (SEQ ID NO: 93).

14. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody comprises the six CDRs indicated below:

heavy chain CDR1: SNGVG (SEQ ID NO: 96);

heavy chain CDR2: TIWSGGGTNYNSAVQS (SEQ ID NO: 97);

heavy chain CDR3: EEKGFAY (SEQ ID NO: 98);

light chain CDR1: KASQNVGINVG (SEQ ID NO: 99);

light chain CDR2: WASNRDT (SEQ ID NO: 100); and

light chain CDR3: LQHNSYPRA (SEQ ID NO: 101).

15. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID

NO: 13;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 13; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 13, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 14;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 14; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 14.

16. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 15;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 15; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 15, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 16;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 16; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 16.

17. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 46;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 46; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 46, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 47;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 47; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 47.

18. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to

claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 54;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 54; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 54, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 55;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 55; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 55.

19. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 62;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 62; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 62, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 63;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 63; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 63.

20. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 70;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 70; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 70, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 71;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 71; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 71.

21. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 78;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 78; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 78, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 79;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 79; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 79.

22. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 86;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 86; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 86, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 87;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 87; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 87.

23. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 94;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 94; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 94, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 95;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 95; or

a light chain containing an amino acid sequence having identity of 80% or

more with the amino acid sequence represented by SEQ ID NO: 95.

24. The anticancer drug according to claim 1 or 2, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to claim 3 or the use according to claim 4, wherein the anti-TMEM-180 antibody contains:

a heavy chain containing the amino acid sequence represented by SEQ ID NO: 102;

a heavy chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 102; or

a heavy chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 102, and

a light chain containing the amino acid sequence represented by SEQ ID NO: 103;

a light chain containing an amino acid sequence containing one to several amino acid additions, substitutions or deletions in the amino acid sequence represented by SEQ ID NO: 103; or

a light chain containing an amino acid sequence having identity of 80% or more with the amino acid sequence represented by SEQ ID NO: 103.

25. The anticancer drug according to any one of claims 1, 2 and 5 to 24, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to any one of claims 3 and 5 to 24, or the use according to any one of claims 4 to 24, wherein the anti-TMEM-180 antibody has one or more N-linked oligosaccharides bound to the Fc region and fucose is not bound to N-acetylglucosamine on the reducing end of the N-linked oligosaccharide.

26. The anticancer drug according to any one of claims 1, 2 and 5 to 25, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to any one of claims 3 and 5 to 25, or the use according to any one of claims 4 to 25, which is targeted at cancer expressing TMEM-180.

27. The anticancer drug according to any one of claims 1, 2 and 5 to 25, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to any one of claims 3 and 5 to 25, or the use according to any one of claims 4 to 25, which is targeted at colon cancer.

28. The anticancer drug according to any one of claims 1, 2 and 5 to 25, the anti-TMEM-180 antibody or an antigen-binding fragment thereof according to any one of claims 3 and 5 to 25, or the use according to any one of claims 4 to 25, which is to be administered concomitantly with vaccine therapy using a composition containing at least one peptide comprising an amino acid sequence represented by SEQ ID NOs: 104 to 170.

29. An anti-TMEM-180 antibody according to any one of claims 5 to 25 or an antigen-binding fragment thereof.

30. A nucleic acid encoding any one of the heavy chains CDR1 to CDR3 and light chains CDR1 to CDR3 according to any one of claims 5 to 14.

31. A nucleic acid encoding any one of the heavy chains and light chains according to any one of claims 15 to 24.

32. An expression vector containing the nucleic acid according to claim 30 or 31.

33. A transformant containing the expression vector according to claim 32.

34. A method for producing an anti-TMEM-180 antibody, or an antigen-binding fragment thereof, comprising the steps of:

expressing an antibody in the transformant according to claim 33; and

recovering the antibody.

35. A method for testing of non-hematologic cancers, comprising a step of measuring the amount of TMEM-180 in a sample collected from a subject.

36. The method according to claim 35, wherein the amount of TMEM-180 is measured by immunoassay using an anti-TMEM-180 antibody or an antigen-binding fragment thereof.

37. The method according to claim 36, wherein the anti-TMEM-180 antibody or antigen-binding fragment thereof is the anti-TMEM-180 antibody or antigen-binding fragment thereof according to claim 29.

38. The method according to any one of claims 35 to 37, which is targeted at colon cancer.

39. The method according to any one of claims 35 to 38, which is used to test for recurrence or metastasis following treatment.

40. A kit for testing of non-hematologic cancers, the kit containing an anti-TMEM-180 antibody or an antigen-binding fragment thereof.

41. The kit according to claim 40, wherein the anti-TMEM-180 antibody or antigen-binding fragment thereof is the anti-TMEM-180 antibody or antigen-binding fragment thereof according to claim 29.

42. The kit according to claim 40 or 41, which is targeted at colon cancer.

43. The use according to any one of claims 4 to 28, wherein the non-hematologic cancers are selected from the group consisting of: colon cancer, brain cancer, breast cancer and combinations thereof.