[CLAIMS]

1. An anti-CD66c (Cluster of Differentiation 66c) antibody or an antigen-binding fragment thereof, comprising the following complementarity determining regions (CDRs):

(i) CDR-H1 comprising an amino acid sequence of SEQ ID NO: 1,
CDR-H2 comprising an amino acid sequence of SEQ ID NO: 2,
CDR-H3 comprising an amino acid sequence of SEQ ID NO: 3,
CDR-L1 comprising an amino acid sequence of SEQ ID NO: 12,
CDR-L2 comprising an amino acid sequence of SEQ ID NO: 5, and
CDR-L3 comprising an amino acid sequence of SEQ ID NO: 13,
(ii) CDR-H1 comprising an amino acid sequence of SEQ ID NO: 9,
CDR-H2 comprising an amino acid sequence of SEQ ID NO: 10,
CDR-H3 comprising an amino acid sequence of SEQ ID NO: 3,
CDR-L1 comprising an amino acid sequence of SEQ ID NO: 12,
CDR-L2 comprising an amino acid sequence of SEQ ID NO: 5, and
CDR-L3 comprising an amino acid sequence of SEQ ID NO: 13,
(iii) CDR-H1 comprising an amino acid sequence of SEQ ID NO: 1,
CDR-H2 comprising an amino acid sequence of SEQ ID NO: 2,
CDR-H3 comprising an amino acid sequence of SEQ ID NO: 3,
CDR-L1 comprising an amino acid sequence of SEQ ID NO: 11,
CDR-L2 comprising an amino acid sequence of SEQ ID NO: 5, and
CDR-L3 comprising an amino acid sequence of SEQ ID NO: 13, or
(iv) CDR-H1 comprising an amino acid sequence of SEQ ID NO: 1,
CDR-H2 comprising an amino acid sequence of SEQ ID NO: 2,
CDR-H3 comprising an amino acid sequence of SEQ ID NO: 3,
CDR-L1 comprising an amino acid sequence of SEQ ID NO: 4,
CDR-L2 comprising an amino acid sequence of SEQ ID NO: 5, and
CDR-L3 comprising an amino acid sequence of SEQ ID NO: 13.

2. The anti-CD66c antibody or an antigen-binding fragment thereof according to claim 1, wherein the heavy chain variable region of the antibody comprises at least one selected from the group consisting of framework sequence (V-FR1) including the amino acid sequence of SEQ ID NO: 23, 24, 25, 26 or 27, framework sequence (V-FR2) including the

amino acid sequence of SEQ ID NO: 33, 34, 35, 36 or 37, framework sequence (V-FR3) including the amino acid sequence of SEQ ID NO: 43, 44, 45, 46 or 47, and framework sequence (V-FR4) including the amino acid sequence of SEQ ID NO: 53, 54, 55, 56 or 57.

3. The anti-CD66c antibody or an antigen-binding fragment thereof according to claim 1, wherein the light chain variable region of the antibody comprises at least one selected from the group consisting of framework sequence (L-FR1) including the amino acid sequence of SEQ ID NO: 29, 30 or 31, framework sequence (L-FR2) including the amino acid sequence of SEQ ID NO: 39, 40 or 41, framework sequence (L-FR3) including the amino acid sequence of SEQ ID NO: 49, 50, or 51, and framework sequence (L-FR4) including the amino acid sequence of SEQ ID NO: 59, 60 or 61.

4. The anti-CD66c antibody or an antigen-binding fragment thereof according to claim 1, comprising a heavy chain variable region including the amino acid sequence of SEQ ID NO: 14, 15, 16, 17 or 18, and a light chain variable region including the amino acid sequence of SEQ ID NO: 19, 20, or 21.

5. The anti-CD66c antibody or an antigen-binding fragment thereof according to claim 1, wherein the fluorescence variability of the antibody against ANS reagent is less than 200% at 62 °C.

6. The anti-CD66c antibody or an antigen-binding fragment thereof according to claim 1, wherein the antigen-binding fragment is scFv, $(scFv)_2$, Fab, Fab' or $F(ab')_2$ of anti-CD66c antibody.

7. A pharmaceutical composition for prevention or treatment of a disease selected from cancer and cancer metastasis, comprising the anti-CD66c antibody or an antigen-binding fragment thereof according to any one of claim 1 to claim 6

8. The pharmaceutical composition according to claim 7, wherein the cancer is CD66c-positive solid cancer.

9. The pharmaceutical composition according to claim 8, wherein the solid cancer is

lung cancer, colon cancer, stomach cancer, liver cancer, breast cancer, or prostate cancer which are CD66c-positive.

10. The pharmaceutical composition according to claim 7, wherein the composition further comprises an inhibitor of PD-1 or PD-Ll binding.

11. A nucleic acid molecule encoding the anti-CD66c antibody or the antigen-binding fragment thereof according to claim 1.

12. A recombinant vector comprising the nucleic acid molecule according to claim 11.

13. A recombinant cell comprising the recombinant vector according to claim 12.

14. A pharmaceutical composition for prevention or treatment of a disease selected from cancer and cancer metastasis, comprising an anti-CD66c antibody or an antigen-binding fragment thereof comprising complementarity determining regions (CDRs) of CDR-H1 comprising an amino acid sequence of SEQ ID NO: 1, CDR-H2 comprising an amino acid sequence of SEQ ID NO: 2, CDR-H3 comprising an amino acid sequence of, SEQ ID NO: 3, CDR-L1 comprising an amino acid sequence of SEQ ID NO: 4, CDR-L2 comprising an amino acid sequence of SEQ ID NO: 5, and CDR-:L3 comprising an amino acid sequence of, SEQ ID NO: 6,

wherein the cancer is selected from the group consisting of colon cancer, stomach cancer, and liver cancer.

15. The pharmaceutical composition according to claim 14, wherein the heavy chain variable region of the antibody comprises at least framework sequence selected from the group consisting of the amino acid sequences of SEQ ID NO: 22, SEQ ID NO: 32, SEQ ID NO: 42, and SEQ ID NO: 52.

16. The pharmaceutical composition according to claim 14, wherein the light chain variable region of the antibody comprises at least framework sequence selected from the group consisting of the amino acid sequences of SEQ ID NO: 28, SEQ ID NO: 38, SEQ ID NO: 48, and SEQ ID NO: 58.

17. The pharmaceutical composition according to claim 14, wherein the heavy chain variable region comprising an amino acid sequence of SEQ ID NO: 7, and the light chain variable region comprising an amino acid sequence of SEQ ID NO: 8.

18. The pharmaceutical composition according to claim 14, wherein the antigen-binding fragment is scFv, $(scFv)_2$, Fab, Fab' or $F(ab')_2$ of anti-CD66c antibody.

19. A pharmaceutical composition for prevention or treatment of a disease selected from cancer and cancer metastasis, comprising an anti-CD66c antibody or an antigen-binding fragment thereof comprising CDR-H1, CDR-H2, CDR-H3, CDR-L1, CDR-L2, and CDR-L3 of the anti-CD66c antibody produced by hybridoma deposited as an accession number of KCLRF-BP-00230,

wherein the cancer is selected from the group consisting of colon cancer, stomach cancer, and liver cancer.

20. The pharmaceutical composition according to claim 19, wherein the composition comprises an anti-CD66c antibody or an antigen-binding fragment thereof comprising a heavy chain variable region and a light chain variable region of the anti-CD66c antibody produced by hybridoma deposited as an accession number of KCLRF-BP-00230.

21. The pharmaceutical composition according to any one of claim 14 to claim 20, wherein the composition further comprises an inhibitor of PD-1 or PD-Ll binding.