

CLAIMS

1. An antibody or antigen-binding fragment thereof, comprising:
 - (a) the sequence of SEQ ID NO: 3 as a variable heavy chain complementarity determining region 3;
 - 5 (b) the sequence of SEQ ID NO: 1 as a variable heavy chain complementarity determining region 1;
 - (c) the sequence of SEQ ID NO: 2 as a variable heavy chain complementarity determining region 2;
 - (d) the sequence of SEQ ID NO: 5 as a variable light chain complementarity
10 determining region 1;
 - (e) the sequence of SEQ ID NO: 6 as a variable light chain complementarity determining region 2; and
 - (f) the sequence of SEQ ID NO: 7 as a variable light chain complementarity determining region 3.
- 15 2. An antibody or antigen-binding fragment thereof according to Claim 1, in which the antibody or antigen-binding fragment thereof comprises a variable heavy chain region comprising the sequence of SEQ ID NO: 4.
3. An antibody or antigen-binding fragment thereof according to Claim 1 or 2, in which the
20 antibody or antigen-binding fragment thereof further comprises a variable light chain region comprising the sequence of SEQ ID NO: 8.
4. An antibody or antigen-binding fragment thereof according to Claim 1, in which the antibody or antigen-binding fragment thereof is selected from the group consisting of:
 - (a) an antibody or antigen binding fragment thereof comprising a heavy chain variable
25 region comprising the sequence of SEQ ID NO: 4 and a light chain variable region comprising the sequence of SEQ ID NO: 8;
 - (b) an antibody or antigen binding fragment thereof comprising a heavy chain variable region comprising the sequence of SEQ ID NO: 10 and a light chain variable region comprising the sequence of SEQ ID NO: 11; and

(c) an antibody or antigen binding fragment thereof comprising a heavy chain variable region comprising the sequence of SEQ ID NO: 12 and a light chain variable region comprising the sequence of SEQ ID NO: 13.

5. An antibody or an antigen-binding fragment thereof according to any preceding claim,
5 in which the antibody or antigen-binding fragment thereof is a-fucosylated.

6. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof is a monoclonal antibody, a domain antibody, a single chain antibody, a Fab fragment, a F(ab')₂ fragment, a single chain variable fragment (scFv), a scFv-Fc fragment, a single chain antibody (scAb) or a nanobody.

10 7. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof is a rabbit, mouse, chimeric, humanized or fully human antigen-binding antibody.

8. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof is selected from the group consisting
15 of IgG1, IgG2, IgG3, and IgG4 isotype antibodies.

9. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof is comprised in a bispecific antibody, a multispecific antibody, or an immunoconjugate further comprising a therapeutic or diagnostic agent.

20 10. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof binds the extracellular domain of human CD38.

11. A nucleic acid molecule encoding the antibody or antigen-binding fragment thereof according to any preceding claim.

25 12. A nucleic acid vector comprising a nucleic acid molecule according to Claim 11.

13. A host cell comprising a nucleic acid vector according to Claim 12.

14. A method for producing an antibody or antigen-binding fragment thereof according to any of Claims 1 to 10 by culturing a host cell according to Claim 13.

15. A composition comprising an antibody or antigen-binding fragment thereof according to any of Claims 1 to 10 and a pharmaceutically acceptable carrier or excipient.
16. A composition according to Claim 15 for use in the treatment of cancer.
17. Use of an antibody or antigen-binding fragment thereof according to any of Claims 1 to 10, or of a composition according to Claim 15, in the manufacture of a medicament for treating cancer.
18. A composition for use according to Claim 16 or a use according to Claim 17. in which the antibody is to be administered simultaneously or sequentially in any order, with a second agent.
19. A composition for use according to Claim 16 or 18 or a use according to Claim 17 or 18. in which the subject has a solid tumor or a haematological cancer.

CLAIMS

1. An antibody or antigen-binding fragment thereof, comprising:
 - (a) the sequence of SEQ ID NO: 3 as heavy chain complementarity determining region 3;
 - 5 (b) the sequence of SEQ ID NO: 1 as heavy chain complementarity determining region 1;
 - (c) the sequence of SEQ ID NO: 2 as heavy chain complementarity determining region 2;
 - (d) the sequence of SEQ ID NO: 5 as light chain complementarity determining region
10 1;
 - (e) the sequence of SEQ ID NO: 6 as light chain complementarity determining region 2; and
 - (f) the sequence of SEQ ID NO: 7 as light chain complementarity determining region 3.
- 15 2. An antibody or antigen-binding fragment thereof according to Claim 1, in which the antibody or antigen-binding fragment thereof comprises a heavy chain variable region comprising the sequence of SEQ ID NO: 4.
3. An antibody or antigen-binding fragment thereof according to Claim 1 or 2, in which the
20 antibody or antigen-binding fragment thereof comprises a light chain variable region comprising the sequence of SEQ ID NO: 8.
4. An antibody or antigen-binding fragment thereof according to Claim 1, in which the antibody or antigen-binding fragment thereof is selected from the group consisting of:
 - (a) an antibody or antigen binding fragment thereof comprising a heavy chain variable region comprising the sequence of SEQ ID NO: 4 and a light chain variable region
25 comprising the sequence of SEQ ID NO: 8;
 - (b) an antibody or antigen binding fragment thereof comprising a heavy chain variable region comprising the sequence of SEQ ID NO: 10 and a light chain variable region comprising the sequence of SEQ ID NO: 11; and

(c) an antibody or antigen binding fragment thereof comprising a heavy chain variable region comprising the sequence of SEQ ID NO: 12 and a light chain variable region comprising the sequence of SEQ ID NO: 13.

5. An antibody or an antigen-binding fragment thereof according to any preceding claim,
5 in which the antibody or antigen-binding fragment thereof is a-fucosylated.
6. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof is a monoclonal antibody, a Fab fragment, a F(ab')₂ fragment, a single chain variable fragment (scFv), a scFv-Fc fragment or a single chain antibody (scAb).
- 10 7. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof is a rabbit, mouse, chimeric, humanized or fully human antigen-binding antibody.
8. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof is selected from the group consisting
15 of IgG1, IgG2, IgG3, and IgG4 isotype antibodies.
9. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof is comprised in a bispecific antibody, a multispecific antibody, or an immunoconjugate further comprising a therapeutic or diagnostic agent.
- 20 10. An antibody or antigen-binding fragment thereof according to any preceding claim, in which the antibody or antigen-binding fragment thereof binds the extracellular domain of human CD38.
11. A nucleic acid molecule encoding the antibody or antigen-binding fragment thereof according to any preceding claim.
- 25 12. A nucleic acid vector comprising a nucleic acid molecule according to Claim 11.
13. A host cell comprising a nucleic acid vector according to Claim 12.
14. A method for producing an antibody or antigen-binding fragment thereof according to any of Claims 1 to 10 by culturing a host cell according to Claim 13.

15. A composition comprising an antibody or antigen-binding fragment thereof according to any of Claims 1 to 10 and a pharmaceutically acceptable carrier or excipient.
16. Use of an antibody according to any of Claims 1 to 10, or of a composition according to Claim 15, in the manufacture of a medicament for treating cancer.
- 5 17. Use according to Claim 16. in which the antibody is to be administered simultaneously or sequentially in any order, with a second agent.
18. Use according to Claim 16 or 117, in which the subject has a solid tumor or a haematological cancer.