

CLAIMS

1. An antibody or antigen-binding fragment thereof, comprising:
- 5 a) the sequence of SEQ ID NO: 4 as variable heavy chain complementarity determining region 3;
- b) a sequence selected from SEQ ID NO: 2, SEQ ID NO: 10, SEQ ID NO: 11 and SEQ ID NO: 12 as variable heavy chain complementarity determining region 1;
- c) a sequence selected from SEQ ID NO: 3, SEQ ID NO: 13, SEQ ID NO: 14, SEQ ID NO: 15, SEQ ID NO: 16 and SEQ ID NO: 17 as variable heavy chain
- 10 complementarity determining region 2;
- d) the sequence of SEQ ID NO: 6 as variable light chain complementarity determining region 1;
- e) the sequence of SEQ ID NO: 7 as variable light chain complementarity determining region 2; and
- 15 f) the sequence of SEQ ID NO: 8 as variable light chain complementarity determining region 3.
2. The antibody or antigen-binding fragment thereof of claim 1, wherein the antibody or antigen-binding fragment thereof comprises a variable heavy chain
- 20 comprising a sequence selected from SEQ ID NO: 5, SEQ ID NO: 18, SEQ ID NO: 19, SEQ ID NO: 20, SEQ ID NO: 21, and SEQ ID NO: 22.
3. The antibody or antigen-binding fragment thereof of claim 1 or 2, wherein the antibody or antigen-binding fragment thereof comprises a variable light chain
- 25 comprising the sequence of SEQ ID NO: 9.
4. The antibody or antigen-binding fragment thereof of any preceding claim, wherein 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
- 30 single chain variable fragment (scFv), a scFv-Fc fragment, a single chain antibody (scAb), or a single domain antibody.
5. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody or antigen-binding fragment thereof is a rabbit, mouse,
- 35 chimeric, humanized or fully human antigen-binding antibody.

6. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody is selected from the group consisting of IgG1, IgG2, IgG3, and IgG4 isotype antibodies.

7. The antibody or antigen-binding fragment thereof of any preceding claim, wherein 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.

8. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody or antigen-binding fragment thereof binds the extracellular domain of human CD25.

9. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody or antigen-binding fragment thereof binds cells expressing human CD25 on their surface and is an anti-CD25 Antibody Agent.

10. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody or antigen-binding fragment does not inhibit the binding of Interleukin-2 (IL-2) to CD25.

11. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody or antigen-binding fragment does not inhibit the signalling of Interleukin-2 (IL-2) via CD25.

12. The antibody or an antigen-binding fragment thereof of any preceding claim wherein the antibody or antigen-binding fragment thereof is afucosylated.

~~13. An affinity matured variant of an antibody or antigen-binding fragment thereof of any one of claims 1 to 12.~~

~~14.~~ 13. An antibody or antigen-binding fragment of any of claims 1 to ~~13~~ 12, wherein the antibody or antigen-binding fragment thereof comprises:

- a) a variable heavy chain comprising the sequence of SEQ ID NO: 5 and a variable light chain comprising the sequence of SEQ ID NO: 9;
- b) a variable heavy chain comprising the sequence of SEQ ID NO: 18 and a variable light chain comprising the sequence of SEQ ID NO: 9;

- c) a variable heavy chain comprising the sequence of SEQ ID NO: 19 and a variable light chain comprising the sequence of SEQ ID NO: 9;
- d) a variable heavy chain comprising the sequence of SEQ ID NO: 20 and a variable light chain comprising the sequence of SEQ ID NO: 9;
- 5 e) a variable heavy chain comprising the sequence of SEQ ID NO: 21 and a variable light chain comprising the sequence of SEQ ID NO: 9; or
- f) a variable heavy chain comprising the sequence of SEQ ID NO: 22 and a variable light chain comprising the sequence of SEQ ID NO: 9.
- 10 ~~15~~14. A nucleic acid molecule encoding the antibody or antigen-binding fragment thereof of any of the Claims 1 to ~~14~~13.
- ~~16~~15. A nucleic acid vector comprising the nucleic acid molecule of claim ~~15~~14.
- 15 ~~17~~16. A host cell comprising the nucleic acid vector of claim ~~16~~15.
- ~~18~~17. A method for producing an antibody or antigen-binding fragment thereof of any one of claims 1 to ~~14~~13 comprising culturing a host cell of claim ~~17~~16.
- 20 ~~19~~18. A pharmaceutical composition comprising an antibody or antigen-binding fragment thereof of any one of claims 1 to ~~14~~13 and a pharmaceutically acceptable carrier or excipient.
- 25 ~~20~~19. The pharmaceutical composition of claim ~~19~~18, wherein said composition is for use in therapy in a subject.
- ~~21~~20. Use of an antibody or antigen-binding fragment thereof of any one of claims 1 to ~~14~~13, or of a composition of claim ~~19~~18 in the manufacture of a medicament for treating cancer in a subject.
- 30 ~~22~~21. The composition for use according to claim ~~20~~19 or the use according to claim ~~21~~20 wherein the antibody is to be administered simultaneously or sequentially in any order, with a second agent.
- 35 ~~23~~22. The composition for use according to claim ~~20-or-22~~21 or the use according to claim ~~21-or-22~~21 wherein the second agent is an immune checkpoint inhibitor or a cancer vaccine.

	~~24~~.~~23~~. The composition for use according to claim ~~23~~.~~22~~ or the use according to claim ~~23~~.~~22~~ wherein the second agent is an immune checkpoint inhibitor, wherein the immune checkpoint inhibitor is a PD-1 antagonist.
5	~~25~~.~~24~~. The composition for use according to claim ~~24~~.~~23~~ or the use according to claim ~~24~~.~~23~~ wherein the PD-1 antagonist is an anti-PD-1 antibody or an anti-PD-L1 antibody.
10	~~26~~.~~25~~. The composition for use according to <u>any one of</u> claims ~~20~~.~~19~~ or ~~22~~.~~21~~ to ~~25~~.~~24~~ or the use according to <u>any one of</u> claims ~~21 to 25~~<u>20 to 24</u> wherein the subject has a solid tumor or a haematological cancer tumour.
15	~~27~~.~~26~~. A method of preparing an anti-CD25 antibody comprising providing an antibody according to any one of claims 1 to ~~14~~.~~13~~, and subjecting the antibody to affinity maturation, wherein the anti-CD25 antibody produced has a greater affinity to CD25 than the parental antibody.
20	~~28~~.~~27~~. A method of preparing a pharmaceutical composition comprising providing an antibody prepared according to a method of claim ~~27~~.~~26~~ and co-formulating the antibody with at least one of more pharmaceutically acceptable excipient.