CLAIMS

1. An antibody or antigen-binding fragment thereof, comprising the aCD25-a-686-HCDR3 amino acid sequence (SEQ ID NO: 4) as variable heavy chain complementarity determining region 3.

2. The antibody or antigen-binding fragment thereof of claim 1, further comprising

a) aCD25-a-686-HCDR1 amino acid sequence (SEQ ID NO: 2) as variable heavy chain complementarity determining region 1; and

b) aCD25-a-686-HCDR2 amino acid sequence (SEQ ID NO: 3) as variable heavy chain complementarity determining region 2.

3. The antibody or antigen-binding fragment thereof of claim 1 or claim 2, further comprising:

a) aCD25-a-686-LCDR1 amino acid sequence (SEQ ID NO: 6) as variable light chain complementarity determining region 1;

b) aCD25-a-686-LCDR2 amino acid sequence (SEQ ID NO: 7) as variable light chain complementarity determining region 2; and

c) aCD25-a-686-LCDR3 amino acid sequence (SEQ ID NO: 8) as variable light chain complementarity determining region 3.

4. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody or antigen-binding fragment thereof comprises a variable heavy chain comprising aCD25-a-686-HCDR123 amino acid sequence (SEQ ID NO:5).

5. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody or antigen-binding fragment thereof comprises a variable light chain comprising aCD25-a-686-LCDR123 amino acid (SEQ ID NO: 9).

6. 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 single chain variable fragment (scFv), a scFv-Fc fragment, a single chain antibody (scAb), or a single domain antibody.

7. The antibody or antigen-binding fragment thereof of any preceding claim, wherein the antibody or antigen-binding fragment thereof is a rabbit, mouse, chimeric, humanized or fully human antigen-binding antibody.

8. 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.

9. 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.

10. 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.

11. 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.

12. 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.

13. 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.

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

15. An antibody or antigen-binding fragment that specifically binds to an epitope of human CD25, wherein the epitope comprises one or more amino acid residues comprised in amino acids 70-84 of SEQ ID NO:1.

16. The antibody or antigen-binding fragment of claim 15, wherein the epitope comprises amino acids 70-84 of SEQ ID NO:1.

17. An affinity matured variant of an antibody or antigen-binding fragment thereof of any one of claims 1 to 16.

18. An antibody or antigen-binding fragment of claim 17, wherein the antibody or antigen-binding fragment thereof comprises an HCDR2 region selected from the group consisting of AIIPVFGTASYAQKFQG (SEQ ID NO: 13), GIIPIFGDASYAQKFQG (SEQ ID NO: 14), GIIPIFGDANYAQKLQG (SEQ ID NO: 15), GIIPLFGRANYAQKFQG (SEQ ID NO: 16) and GIIPVFGQANYAQKFQG (SEQ ID NO: 17).

19. An antibody or antigen-binding fragment of claim 17, wherein the antibody or antigen-binding fragment thereof comprises an HCDR1 region selected from the group consisting of GTFSSLAIT (SEQ ID NO: 10), GTFSSLAIS (SEQ ID NO: 2), GTFSALAIS (SEQ ID NO: 11) and GTFSSLAIF (SEQ ID NO: 12).

20. An antibody or antigen-binding fragment of any of claims 17 to 19, wherein the antibody or antigen-binding fragment thereof comprises a variable heavy chain comprising a sequence selected from aCD25-a-686-m1-HCDR123 amino acid sequence (SEQ ID NO: 18), aCD25-a-686-m2-HCDR123 amino acid sequence (SEQ ID NO: 19), aCD25-a-686-m3-HCDR123 amino acid sequence (SEQ ID NO: 20), aCD25-a-686-m4-HCDR123 amino acid sequence (SEQ ID NO: 21), and aCD25-a-686-m5-HCDR123 amino acid sequence (SEQ ID NO: 22).

21. An antibody or antigen-binding fragment of any of claims 17 to 20, wherein the antibody or antigen-binding fragment thereof comprises a variable light chain comprising a sequence selected from aCD25-a-686-m1-LCDR123 amino acid sequence (SEQ ID NO: 9), aCD25-a-686-m2-LCDR123 amino acid sequence (SEQ ID NO: 9), aCD25-a-686-m3-LCDR123 amino acid sequence (SEQ ID NO: 9), aCD25-a-686-m4-LCDR123 amino acid sequence (SEQ ID NO: 9), and aCD25-a-686-m5-LCDR123 amino acid sequence (SEQ ID NO: 9).

22. An antibody or antigen-binding fragment of any of claims 17 to 21, wherein the antibody or antigen-binding fragment thereof comprises:

a) a variable heavy chain comprising a aCD25-a-686-m1-HCDR123 amino acid sequence (SEQ ID NO: 18) and a variable light chain comprising a aCD25-a-686-m1-LCDR123 amino acid sequence (SEQ ID NO: 9);

b) a variable heavy chain comprising a aCD25-a-686-m2-HCDR123 amino acid sequence (SEQ ID NO: 19) and a variable light chain comprising a aCD25-a-686-m2-LCDR123 amino acid sequence (SEQ ID NO: 9);

c) a variable heavy chain comprising a aCD25-a-686-m3-HCDR123 amino acid sequence (SEQ ID NO: 20) and a variable light chain comprising a aCD25-a-686-m3-LCDR123 amino acid sequence (SEQ ID NO: 9);

d) a variable heavy chain comprising a aCD25-a-686-m4-HCDR123 amino acid sequence (SEQ ID NO: 21) and a variable light chain comprising a aCD25-a-686-m4-LCDR123 amino acid sequence (SEQ ID NO: 9); or

e) a variable heavy chain comprising a aCD25-a-686-m5-HCDR123 amino acid sequence (SEQ ID NO: 22) and a variable light chain comprising a aCD25-a-686-m5-LCDR123 amino acid sequence (SEQ ID NO: 9).

23. A nucleic acid molecule encoding the antibody or antigen-binding fragment thereof of any of the Claims 1 to 22.

24. A nucleic acid vector comprising the nucleic acid molecule of claim 23.

25. A host cell comprising the nucleic acid vector of claim 24.

26. A method for producing an antibody or antigen-binding fragment thereof of any one of claims 1 to 22 comprising culturing a host cell of claim 25.

27. A composition comprising an antibody or antigen-binding fragment thereof of any one of claims 1 to 22.

28. The composition of claim 27 that further comprises a pharmaceutically acceptable carrier or excipient.

29. The pharmaceutical composition of claim 27 or claim 28, wherein said composition is for use in the treatment of cancer.

30. Use of an antibody or antigen-binding fragment thereof of any one of claims 1 to 22, or of a composition of claim 27 or 28 in the manufacture of a medicament for treating cancer.

31. Use of an antibody or antigen-binding fragment thereof that competes with an antibody according to anyone of claims 1 to 22 for the binding of CD25 in the manufacture of a medicament for treating cancer.

32. A method of treating cancer in a subject, comprising administering to the subject an effective amount of the composition of claim 27 or claim 28.

33. A method of treating cancer in a subject, comprising administering to the subject an effective amount of an antibody or antigen-binding fragment thereof that competes with an antibody according to anyone of claims 1 to 22 for the binding of CD25.

34. The method of claim 32 or 33, further comprising administering, simultaneously or sequentially in any order, a second agent to the subject.

35. The method of claim 34 wherein the second agent is an immune checkpoint inhibitor or a cancer vaccine.

36. The method of claim 35 wherein the second agent is an immune checkpoint inhibitor, wherein the immune checkpoint inhibitor is a PD-1 antagonist.

37. The method of claim 36 wherein the PD-1 antagonist is an anti-PD-1 antibody or an anti-PD-L1 antibody.

38. The method of any one of claims 32 to 37 wherein the subject has a solid tumor.

39. The method of any one of claims 32 to 37 wherein the subject has a haematological cancer tumour.

40. A method of depleting regulatory T cells in a tumour in a subject comprising the step of administering an effective amount of the composition of claim 27 or claim 28 or an antibody or antigen-binding fragment that competes with an antibody according to anyone of claims 1 to 22 for the binding of CD25.

41. A method according to claim 40, wherein the subject has a solid tumor.

42. A method according to claim 40, wherein the subject has a haematological cancer tumor.

43. An antibody or antigen-binding fragment that competes with an antibody according to anyone of claims 1 to 22 for the binding of CD25 for use in the treatment of cancer.

44. A kit comprising the composition of claim 27 or claim 28 in a container.

45. A method of preparing an anti-CD25 antibody comprising providing an antibody according to any one of claims 1 to 22, and subjecting the antibody to affinity maturation, wherein the anti-CD25 antibody produced has a greater affinity to CD25 than the parental antibody,

46. A method of preparing a pharmaceutical composition comprising providing an antibody prepared according to a method of claim 45 and co-formulating the antibody with at least one of more pharmaceutically acceptable excipient.