

CLAIMS

1. An anti-CD122 antibody or an antigen-binding portion thereof, wherein the antibody or antigen-binding portion comprises a heavy chain variable (VH) region and a light chain variable (VL) region wherein:

(a) the VH region amino acid sequence comprises a HCDR1 comprising SEQ ID NO: 3, a HCDR2 comprising SEQ ID NO: 5 and a HCDR3 comprising SEQ ID NO: 7; and the VL region amino acid sequence comprises a LCDR1 comprising SEQ ID NO: 18, a LCDR2 comprising SEQ ID NO: 13 and a LCDR3 comprising SEQ ID NO: 15; or

(b) the VH region amino acid sequence comprises a HCDR1 comprising SEQ ID NO: 3, a HCDR2 comprising SEQ ID NO: 5 and a HCDR3 comprising SEQ ID NO: 7; and the VL region amino acid sequence comprises a LCDR1 comprising SEQ ID NO: 11, a LCDR2 comprising SEQ ID NO: 13 and a LCDR3 comprising SEQ ID NO: 15.

2. The antibody or antigen-binding portion of claim 1 wherein

(a) the VH region amino acid sequence comprises SEQ ID NO: 1 and the VL region amino acid sequence comprises SEQ ID NO: 17; or

(b) the VH region amino acid sequence comprises SEQ ID NO: 1 and the VL region amino acid sequence comprises SEQ ID NO: 9.

3. The antibody or antigen-binding portion of claim 1 or 2, wherein the antibody or antigen-binding portion is humanized or chimeric.

4. The antibody or antigen-binding portion of any one of claims 1-3, wherein the VH region, the VL region, or both the VH and the VL region comprise one or more human framework region amino acid sequences.

5. The antibody or antigen-binding portion of any one of claims 1-4, wherein the VH region, the VL region, or both the VH and the VL region comprise a human variable region framework scaffold amino acid sequence into which the CDR amino acid sequences have been inserted.

6. The antibody or antigen-binding portion of any one of claims 1 and 3-5, wherein the VH region comprises an IGHV3-23 human germline scaffold amino acid sequence into which the HCDR1, HCDR2 and HCDR3 amino acid sequences have been inserted.
7. The antibody or antigen-binding portion of any one of claims 1 and 3-6, wherein the VL region comprises an IGKV1-33 human germline scaffold amino acid sequence into which the LCDR1, LCDR2 and LCDR3 amino acid sequences have been inserted.
8. The antibody or antigen-binding portion of any one of claims 1-7, wherein the antibody or antigen-binding portion comprises an immunoglobulin constant region.
9. The antibody or antigen-binding portion of claim 8, wherein the immunoglobulin constant region is IgG, IgE, IgM, IgD, IgA or IgY.
10. The antibody or antigen-binding portion of claim 9, wherein the immunoglobulin constant region is IgG1, IgG2, IgG3, IgG4, IgA1 or IgA2.
11. The antibody or antigen-binding portion of claim 8, wherein the immunoglobulin constant region is immunologically inert.
12. The antibody or antigen-binding portion of claim 8, wherein the immunoglobulin constant region is a wild-type human IgG4 constant region, a human IgG4 constant region comprising the amino acid substitution S228P, a wild-type human IgG1 constant region, a human IgG1 constant region comprising the amino acid substitutions L234A, L235A and G237A or a wild-type human IgG2 constant region, wherein numbering is according to the EU index as in Kabat.
13. The antibody or antigen-binding portion of claim 8, wherein the immunoglobulin constant region comprises any one of SEQ ID NOs: 32-38.

14. The antibody or antigen-binding portion of any one of claims 1-13, wherein the antibody or antigen-binding portion is an Fab, an Fab', an F(ab')₂, an Fv, an scFv, a maxibody, a minibody, a diabody, a triabody, a tetrabody, or a bis-scFv.

~~15. The antibody or antigen-binding portion of any one of claims 1-14, wherein the antibody is monoclonal.~~

~~15~~15. The antibody or antigen-binding portion of any one of claims 1-~~15~~14, wherein the antibody or antigen-binding portion is ~~a-tetrameric-antibody, a-tetravalent antibody or a-multispecific antibody.~~

~~17~~16. The antibody or antigen-binding portion of any one of claims 1-~~16~~15, wherein the antibody or antigen-binding portion is a bispecific antibody or a bispecific antigen-binding portion that binds specifically to a first antigen and a second antigen, wherein the first antigen is CD122 and the second antigen is not CD122.

~~18~~17. An immunoconjugate comprising the antibody or antigen-binding portion of any one of claims 1-~~17~~16, linked to a therapeutic agent.

~~19~~18. The immunoconjugate of claim ~~18~~17, wherein the therapeutic agent is a cytotoxin, a radioisotope, a chemotherapeutic agent, an immunomodulatory agent, a cytostatic enzyme, a cytolytic enzyme, a therapeutic nucleic acid, an anti-angiogenic agent, an anti-proliferative agent, or a pro-apoptotic agent.

~~20~~19. A pharmaceutical composition comprising the antibody or antigen-binding portion of any one of claims 1-~~17~~16 or the immunoconjugate of claim ~~17~~18 or ~~18~~19, and a pharmaceutically acceptable carrier, diluent or excipient.

~~21~~20. A nucleic acid molecule encoding
(a) the VH region amino acid sequence;
(b) the VL region amino acid sequence; or

(c) both the VH and the VL region amino acid sequences of the antibody or antigen-binding portion of any one of claims 1-~~17~~16.

~~22~~21. An expression vector comprising the nucleic acid molecule of claim ~~21~~20.

~~23~~22. A recombinant host cell comprising the nucleic acid molecule of claim ~~24~~20 or the expression vector of claim ~~21~~22.

~~23~~. A recombinant host cell comprising a first nucleic acid molecule encoding the VH region amino acid sequence of the antibody or antigen-binding portion of any one of claims 1-16, and a second nucleic acid molecule encoding the VL region amino acid sequence of said antibody or antigen-binding portion.

24. A method of producing an anti-CD122 antibody or an antigen-binding portion thereof, the method comprising:

culturing ~~a~~the recombinant host cell ~~comprising the expression vector~~ of claim ~~22-22~~ or 23 under conditions whereby the nucleic acid molecule is expressed, thereby producing the antibody or antigen-binding portion; and

isolating the antibody or antigen-binding portion from the host cell or culture.

25. ~~A method for suppressing an immune response in a subject, comprising administering to the subject a therapeutically effective amount~~ Use of the antibody or antigen-binding portion of any one of claims 1-~~17~~16, the immunoconjugate of claim ~~18-17~~ or 18,19 or the pharmaceutical composition of claim ~~20~~19 in the manufacture of a medicament for suppressing an immune response.

26. The ~~method~~use of claim 25, wherein the immune response is mediated by CD122.

27. ~~A method for treating or preventing a disease in a subject, comprising administering to the subject a therapeutically effective amount~~ Use of the antibody or antigen-binding portion of any

one of claims 1-~~16~~17, the immunoconjugate of claim ~~17~~18 or ~~19~~18, or the pharmaceutical composition of claim ~~20~~19 in the manufacture of a medicament for treating or preventing a disease.

28. The ~~method~~-use of claim 27, wherein the disease is an inflammatory disease or an autoimmune disease.

29. The ~~method~~-use of claim 27, wherein the disease is vitiligo, celiac disease, type 1 diabetes, multiple sclerosis, graft-versus-host disease, systemic lupus erythematosus, psoriasis, atopic dermatitis, alopecia areata, ulcerative colitis, or rheumatoid arthritis.

30. ~~A method for suppressing IL-15 induced migration of T cells from skin, the method comprising contacting the skin with a therapeutically effective amount~~-Use of the antibody or antigen-binding portion of any one of claims 1-~~16~~17, the immunoconjugate of claim ~~17~~18 or ~~18~~19 or the pharmaceutical composition of claim ~~20~~19 in the manufacture of a medicament for suppressing IL-15 induced migration of T cells from skin.

31. The antibody or antigen-binding portion of any one of claims 1-~~17~~16, the immunoconjugate of claim ~~18~~17 or ~~18~~19 or the pharmaceutical composition of claim ~~19~~20, for use as a medicament.