Claims

1. An interleukin-15 inhibitor for use in the treatment of atopic dermatitis, wherein said interleukin-15 inhibitor is an anti-IL-15 antibody.

2. Use of an interleukin-15 inhibitor for the manufacture of a medicament for the treatment of atopic dermatitis, wherein said interleukin-15 inhibitor is an anti-IL-15 antibody.

3. The use of claim 2, wherein the anti-IL-15 antibody comprises:
   (1) a heavy chain variable region of SEQ ID NO: 5 or any variant thereof wherein said variant has the amino acid sequence of SEQ ID NO: 5 except that 1, 2, 3 or 4 amino acids are substituted by a different amino acid, wherein substitutions are selected among:
      (i) arginine (R) at position H3 (VH RH3) substituted by glutamine (Q), methionine (M) at position H5 (VH MH5) substituted by valine (V), alanine (A) at position H6 (VH AH6) substituted by glutamic acid (E), alanine (A) at position H49 (VH AH49) substituted by serine (S), within the heavy chain variable framework region,
      (ii) aspartic acid (D) at position H61 (VH DH61) substituted by glutamic acid (E), serine (S) at position H62 (VH SH62) substituted by threonine (T), within the heavy chain CDR2, and
      (iii) methionine (M) at position H98 (VH MH98) substituted by leucine (L), phenylalanine (F), isoleucine (I), or alanine (A), tryptophan (W) at position H100C (VH WH100C) substituted by tyrosine (Y), phenylalanine (F) or alanine (A), methionine (M) at position H100E (VH MH100E) substituted by leucine (L), phenylalanine (F) or isoleucine (I), within the heavy chain CDR3;

      and

   (2) a light chain variable region of SEQ ID NO: 9.

4. The use of claim 2, wherein the anti-IL-15 antibody comprises:
   (1) a heavy chain variable region of SEQ ID NO: 6 or any variant thereof wherein said variant has the amino acid sequence of SEQ ID NO: 6 except that 1, 2, 3 or 4 amino acids are substituted by a different amino acid and

(2) a light chain variable region of SEQ ID NO: 9.

5. The use of claim 2, wherein the anti-IL-15 antibody comprises:

(1) a heavy chain variable region of amino acid sequence of SEQ ID NO: 5 having substitutions in said sequence of SEQ ID NO: 5 selected among:

(i) VH RH3 is substituted by glutamine (Q), VH MH5 is substituted by valine (V), VH AH6 is substituted by glutamic acid (E),

(ii) VH SH62 is substituted by threonine (T), and

(iii) VH WH100C is substituted by tyrosine (Y);

and

(2) a light chain variable region of amino acid sequence of SEQ ID NO: 9.

6. The use of any one of claims 2 to 5, wherein the anti-IL-15 antibody comprises:

(1) a heavy chain variable region selected from: SEQ ID NO: 5, SEQ ID NO: 6, SEQ ID NO: 7 and SEQ ID NO: 8, and

(2) a light chain variable region of SEQ ID NO: 9.

7. The use of any one of claims 2 to 5, wherein the anti-IL-15 antibody comprises a heavy chain variable region comprising SEQ ID NO: 6 and a light chain variable region comprising SEQ ID NO: 9.

8. The use of any one of claims 2 to 7, wherein the anti-IL-15 antibody comprises:

- a heavy chain of SEQ ID NO: 10 and a light chain of SEQ ID NO: 11 or a variant or fragment thereof; or
- a variable heavy chain region of SEQ ID NO: 12 or a variant or fragment thereof and a variable light chain region of SEQ ID NO: 13 or a variant or fragment thereof; or
- a variable heavy chain region of SEQ ID NO: 14 or a variant or fragment thereof and a variable light chain region of SEQ ID NO: 15 or a variant or fragment thereof; or
- a heavy chain of SEQ ID NO: 16 and a light chain of SEQ ID NO: 17 or a variant or fragment thereof.

9. The use of any one of claims 2 to 7, wherein the anti-IL-15 antibody comprises a heavy chain comprising SEQ ID NO: 16 and a light chain comprising SEQ ID NO: 17.

10. The use of any one of claims 2 to 9, wherein the anti-IL-15 antibody binds to human IL-15.

11. The use of any one of claims 2 to 10, wherein the anti-IL-15 antibody is isolated.

12. The use of any one of claims 2 to 11, wherein the anti-IL-15 antibody is monoclonal.

13. The use of any one of claims 2 to 12, wherein the anti-IL-15 antibody is humanized.

14. The use of any one of claims 2 to 13, wherein the anti-IL-15 antibody is to be administered to a human subject suffering from atopic dermatitis.

15. The use of any one of claims 2 to 14, wherein the anti-IL-15 antibody is to be administered orally, parenterally, sublingually, transdermally, transmucosally, or topically.

16. The use of claim 15, wherein the anti-IL-15 antibody is to be administered intravenously or subcutaneously.

17. The use of any one of claims 2 to 16, wherein the anti-IL-15 antibody is comprised in a pharmaceutical composition, optionally comprising one or more pharmaceutically acceptable additional ingredients.

18. The use of claim 17, wherein the pharmaceutical composition further comprises an agent useful in the prevention and/or treatment of atopic dermatitis and a pharmaceutically acceptable carrier, diluent or excipient thereof.

19. The use of claim 18, wherein the pharmaceutical composition further comprises a co-agent useful in the prevention and/or treatment of atopic dermatitis such as at least one anti-IL-4R antibody or at least one corticosteroid or a mixture thereof.

20. The use of claim 18 or 19, wherein the pharmaceutical composition further comprises at least one anti-IL-4R antibody, such as dupilumab, an anti-IL-13 such as tralokinumab, a JAK inhibitor such as abrocitinib, upadacitinib or ruxolitinib.

21. The use of claim 18 or 19, wherein the pharmaceutical composition further comprises at least one corticosteroid, such as dexamethasone.