Claims:

What is Claimed is:

1) An anti-IL-23p19 antibody or antigen-binding fragment thereof, wherein the antibody or antigen-binding fragment thereof comprises:
   a) a light chain variable region comprising the amino acid sequence of SEQ ID NO:19 *(CDR1-L)*; the amino acid sequence of SEQ ID NO:20 *(CDR2-L)*; and the amino acid sequence of SEQ ID NO:21 *(CDR3-L)*; and
   b) a heavy chain variable region comprising the amino acid sequence of SEQ ID NO: 63, 66, 67 or 68 *(CDR1-H)*; the amino acid sequence of SEQ ID NO:64 *(CDR2-H)*; and the amino acid sequence of SEQ ID NO:65 *(CDR3-H)*.

2) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 1, wherein the antibody or antigen-binding fragment thereof comprises:
   a) a light chain variable region comprising the amino acid sequence of SEQ ID NO:19 *(CDR1-L)*; the amino acid sequence of SEQ ID NO:20 *(CDR2-L)*; and the amino acid sequence of SEQ ID NO:21 *(CDR3-L)*; and
   b) a heavy chain variable region comprising the amino acid sequence of SEQ ID NO:63 *(CDR1-H)*; the amino acid sequence of SEQ ID NO:64 *(CDR2-H)*; and the amino acid sequence of SEQ ID NO:65 *(CDR3-H)*.

3) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 1, wherein the antibody or antigen-binding fragment thereof comprises:
   a) a light chain variable region comprising the amino acid sequence of SEQ ID NO:19 *(CDR1-L)*; the amino acid sequence of SEQ ID NO:20 *(CDR2-L)*; and the amino acid sequence of SEQ ID NO:21 *(CDR3-L)*; and
   b) a heavy chain variable region comprising the amino acid sequence of SEQ ID NO:66 *(CDR1-H)*; the amino acid sequence of SEQ ID NO:64 *(CDR2-H)*; and the amino acid sequence of SEQ ID NO:65 *(CDR3-H)*.

4) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 1, wherein the antibody or antigen-binding fragment thereof comprises:

a) a light chain variable region comprising the amino acid sequence of SEQ ID NO:19 *(CDR1-L)*; the amino acid sequence of SEQ ID NO:20 *(CDR2-L)*; and the amino acid sequence of SEQ ID NO:21 *(CDR3-L)*; and

b) a heavy chain variable region comprising the amino acid sequence of SEQ ID NO:67 *(CDR1-H)*; the amino acid sequence of SEQ ID NO:64 *(CDR2-H)*; and the amino acid sequence of SEQ ID NO:65 *(CDR3-H)*.

5) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 1, wherein the antibody or antigen-binding fragment thereof comprises:

a) a light chain variable region comprising the amino acid sequence of SEQ ID NO:19 *(CDR1-L)*; the amino acid sequence of SEQ ID NO:20 *(CDR2-L)*; and the amino acid sequence of SEQ ID NO:21 *(CDR3-L)*; and

b) a heavy chain variable region comprising the amino acid sequence of SEQ ID NO:68 *(CDR1-H)*; the amino acid sequence of SEQ ID NO:64 *(CDR2-H)*; and the amino acid sequence of SEQ ID NO:65 *(CDR3-H)*.

6) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 1, wherein the antibody or antigen-binding fragment thereof comprises a light chain variable region comprising the amino acid sequence of any one of SEQ ID NO:158, 160, 162 or 164; and a heavy chain variable region comprising the amino acid sequence any one of SEQ ID NO:166, 168, 170 or 172.

7) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 6, wherein the antibody or antigen-binding fragment thereof comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:160 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:166.

8) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 6, wherein the antibody or antigen-binding fragment thereof comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:160 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:168.

9) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 6, wherein the antibody or antigen-binding fragment thereof comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:158 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:166.

10) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 6, wherein the antibody or antigen-binding fragment thereof comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:158 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:168.

11) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 6, wherein the antibody or antigen-binding fragment thereof comprises the amino acid sequence of SEQ ID NO:166 or 168 linked to a human IgG1 heavy chain constant region; and the amino acid sequence of SEQ ID NO:158 or 160 linked to a human kappa light chain constant region.

12) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 1, wherein the antibody or antigen-binding fragment thereof comprises:

a) a humanized light chain variable domain comprising the CDRs of SEQ ID NO:158 or 160 and framework regions having an amino acid sequence at least 90% identical to the amino acid sequence of the framework regions of the variable domain light chain amino acid sequence of SEQ ID NO:158 or 160; and

b) a humanized heavy chain variable domain comprising the CDRs of SEQ ID NO:166 or 168 and framework regions having an amino acid sequence at least 90% identical to the amino acid sequence of the framework regions of the variable domain heavy chain amino acid sequence of SEQ ID NO:166 or 168.

13) The anti-IL-23p19 antibody according to any one of claims 1 to 12, wherein said antibody is a monoclonal antibody.

14) The anti-IL-23p19 antibody according to claim 1, wherein the antibody is humanized monoclonal anti-IL-23p19 antibody comprising a light chain variable region comprising the amino acid sequence selected from the group consisting of any one of SEQ ID NO:158, 160, 162 and 164 and a heavy chain variable region comprising the amino acid sequence selected from the group consisting of any one of SEQ ID NO:166, 168, 170 and 172.

15) The humanized monoclonal anti-IL-23p19 antibody according to claim 14, wherein said antibody comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:160 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:166.

16) The humanized monoclonal anti-IL-23p19 antibody according to claim 14, wherein said antibody comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:160 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:168.

17) The humanized monoclonal anti-IL-23p19 antibody according to claim 14, wherein said antibody comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:158 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:166.

18) The humanized monoclonal anti-IL-23p19 antibody according to claim 14, wherein said antibody comprises a light chain variable region comprising the amino acid sequence of SEQ ID NO:158 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:168.

19) The anti-IL-23p19 antibody according to claim 1, wherein the antibody is a humanized monoclonal anti-IL-23p19 antibody comprising a light chain comprising the amino acid sequence of SEQ ID NO:174 or 180 and a heavy chain comprising the amino acid sequence of SEQ ID NO:176 or 178.

20) The humanized monoclonal anti-IL-23p19 antibody according to claim 19, wherein said antibody comprises a light chain comprising the amino acid sequence of SEQ ID NO:174 and a heavy chain comprising the amino acid sequence of SEQ ID NO:176.

21) The humanized monoclonal anti-IL-23p19 antibody according to claim 19, wherein said antibody comprises a light chain comprising the amino acid sequence of SEQ ID NO:174 and a heavy chain comprising the amino acid sequence of SEQ ID NO:178.

22) The humanized monoclonal anti-IL-23p19 antibody according to claim 19, wherein said antibody comprises a light chain comprising the amino acid sequence of SEQ ID NO:180 and a heavy chain comprising the amino acid sequence of SEQ ID NO:176.

23) The humanized monoclonal anti-IL-23p19 antibody according to claim 19, wherein said antibody comprises a light chain comprising the amino acid sequence of SEQ ID NO: 180 and a heavy chain comprising the amino acid sequence of SEQ ID NO: 178.

Claims:

What is Claimed is:

~~24)~~1) An anti-IL-23p19 antibody or antigen-binding fragment thereof that binds to human IL-23p19 at an epitope consisting of amino acid residues 108 to 126 and amino acid residues 137 to 151 of SEQ ID NO: 181.

~~25)~~2) An anti-IL-23p19 antibody or antigen-binding fragment thereof that competitively binds to human IL-23p19 with:

a) a humanized monoclonal anti-IL-23p19 antibody comprising a light chain comprising the amino acid sequence of SEQ ID NO:174 and a heavy chain comprising the amino acid sequence of SEQ ID NO:176; or

b) a humanized monoclonal anti-IL-23p19 antibody comprising a light chain comprising the amino acid sequence of SEQ ID NO:174 and a heavy chain comprising the amino acid sequence of SEQ ID NO:178; or

c) a humanized monoclonal anti-IL-23p19 antibody comprising a light chain comprising the amino acid sequence of SEQ ID NO:180 and a heavy chain comprising the amino acid sequence of SEQ ID NO:176; or

d) a humanized monoclonal anti-IL-23p19 antibody comprising a light chain comprising the amino acid sequence of SEQ ID NO: 180 and a heavy chain comprising the amino acid sequence of SEQ ID NO: 178.

~~26)~~3) The anti-IL-23p19 antibody according to any one of claims ~~24~~ 1 or ~~25~~2, wherein said antibody is a monoclonal antibody.

~~27) An antibody or antigen-binding fragment according to any one of claims 1 to 26 for use in medicine.~~

~~28) The antibody or antigen-binding fragment according to claim 27, wherein the use is the treatment of an inflammatory disease, of an autoimmune disease, of a respiratory disease, of a metabolic disorder or of cancer.~~

29) The antibody or antigen-binding fragment according to claim 27, wherein the use is for the treatment of psoriasis, inflammatory bowel disease, psoriatic arthritis, multiple sclerosis, rheumatoid arthritis, or ankylosing spondylitis.

30) A pharmaceutical composition comprising an antibody or antigen-binding fragment according to any one of claims 1 to 26 and a pharmaceutically acceptable carrier.

31) A method for treating a subject having an IL-23-associated disorder comprising administering to the subject an antibody or antigen-binding fragment according to any one of claims 1 to 26, or a pharmaceutical composition according to claim 30, which antibody or antigen-binding fragment binds to human IL-23.

32) A method for treating an inflammatory disease, an autoimmune disease, a respiratory disease, a metabolic disorder or cancer comprising administering to a subject in need thereof an effective amount of an antibody or antigen-binding fragment according to any one of claims 1 to 26, or a pharmaceutical composition according to claim 30.

33) The method according to claim 32, wherein the disease is psoriasis, inflammatory bowel disease, psoriatic arthritis, multiple sclerosis, rheumatoid arthritis, or ankylosing spondylitis.

34) A method for inhibiting the binding of IL-23 to the IL-23 receptor on a mammalian cell, comprising administering to the cell an antibody or antigen-binding fragment according to any one of claims 1 to 26, whereby signaling mediated by the IL-23 receptor is inhibited.

35) An anti-IL-23p19 antibody or antigen-binding fragment thereof comprising a light chain variable region comprising:

a) a light chain CDR1 (L-CDR1) sequence of SEQ ID NO:1, 4, 6, 7, 8, 11, 15, 18, 19, 22, 27 or 30;

b) a light chain CDR2 (L-CDR2) sequence of SEQ ID NO:2, 5, 9, 12, 16, 20, 23, 25, 28 or 31; and

c) a light chain CDR3 (L-CDR3) sequence of SEQ ID NO:3, 10, 13, 14, 17, 21, 24, 26, 29, or 32;

and a heavy chain variable region comprising:

d) a heavy chain CDR1 (H-CDR1) sequence of SEQ ID NO:33, 36, 38, 40, 43, 45, 48, 51, 54, 57, 60, 63, 66, 67, 68, 69, 77 or 80;

e) a heavy chain CDR2 (H-CDR2) sequence of SEQ ID NO:34, 39, 41, 46, 49, 52, 55, 58, 61, 64, 70, 72, 73, 75, 78 or 81; and

f) a heavy chain CDR3 (H-CDR3) sequence of SEQ ID NO:35, 37, 42, 44, 47, 50, 53, 56, 59, 62, 65, 71, 74, 76, 79 or 82.

36) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 35, wherein the antibody or antigen-binding fragment thereof comprises:

a) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:1, 2, 3, 33, 34, and 35, respectively; or

b) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:4, 5, 3, 36, 34 and 37, respectively; or

c) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:1, 2, 3, 38, 39 and 35, respectively; or

d) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:6, 2, 3, 40, 41 and 42, respectively; or

e) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:7, 2, 3, 43, 41 and 44, respectively; or

f) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:8, 9, 10, 45, 46 and 47, respectively; or

g) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:8, 9, 10, 48, 49 and 50, respectively; or

h) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:11, 12, 13, 51, 52 and 53, respectively; or

i) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:7, 2, 14, 54, 55 and 56, respectively; or

j) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:15, 16, 17, 57, 58 and 59, respectively; or

k) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:18, 16, 17, 60, 61 and 62, respectively; or

l) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:19, 20, 21, 63, 66, 67 or 68, 64 and 65, respectively; or

m) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:22, 23, 24, 69, 70 and 71, respectively; or

n) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:22, 25, 26, 55, 72 and 71, respectively; or

o) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:8, 9, 10, 45, 73 and 74, respectively; or

p) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:27, 28, 29, 45, 75 and 76, respectively; or

q) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:8, 9, 10, 77, 78 and 79, respectively; or

r) a L-CDR1, a L-CDR2, a L-CDR3, a H-CDR1, a H-CDR2 and a H-CDR3 sequence of SEQ ID NO:30, 31, 32, 80, 81 and 82, respectively.

37) The anti-IL-23p19 antibody or antigen-binding fragment thereof according to claim 36, wherein the antibody or antigen-binding fragment thereof comprises:

a) a light chain variable region comprising the amino acid sequence of SEQ ID NO:84 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:121; or

b) a light chain variable region comprising the amino acid sequence of SEQ ID NO:86 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:123; or

c) a light chain variable region comprising the amino acid sequence of SEQ ID NO:88 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:125; or

d) a light chain variable region comprising the amino acid sequence of SEQ ID NO:90 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:127; or

e) a light chain variable region comprising the amino acid sequence of SEQ ID NO:91 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:128; or

f) a light chain variable region comprising the amino acid sequence of SEQ ID NO:93 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:130; or

g) a light chain variable region comprising the amino acid sequence of SEQ ID NO:95 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:132; or

h) a light chain variable region comprising the amino acid sequence of SEQ ID NO:97 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:134; or

i) a light chain variable region comprising the amino acid sequence of SEQ ID NO:99 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:136; or

j) a light chain variable region comprising the amino acid sequence of SEQ ID NO:101 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:138; or

k) a light chain variable region comprising the amino acid sequence of SEQ ID NO:103 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:140; or

l) a light chain variable region comprising the amino acid sequence of SEQ ID NO:105 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:142; or

m) a light chain variable region comprising the amino acid sequence of SEQ ID NO:107 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:144; or

n) a light chain variable region comprising the amino acid sequence of SEQ ID NO:109 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:146; or

o) a light chain variable region comprising the amino acid sequence of SEQ ID NO:111 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:148; or

p) a light chain variable region comprising the amino acid sequence of SEQ ID NO:113 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:150; or

q) a light chain variable region comprising the amino acid sequence of SEQ ID NO:115 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:152; or

r) a light chain variable region comprising the amino acid sequence of SEQ ID NO:117 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:154; or

s) a light chain variable region comprising the amino acid sequence of SEQ ID NO:119 and a heavy chain variable region comprising the amino acid sequence SEQ ID NO:156.

38) An isolated polynucleotide comprising a sequence encoding a light chain variable region of an antibody or antibody fragment having the amino acid sequence of SEQ ID NO:84, 86, 88, 90, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109, 111, 113, 115, 117 or 119, or encoding a heavy chain variable region of an antibody or antibody fragment having the amino acid sequence of SEQ ID

NO:121, 123, 125, 127, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154 or 156.

39) An isolated polynucleotide comprising a sequence encoding a light chain variable region of an antibody or antibody fragment having the amino acid sequence of SEQ ID NO:158, 160, 162 or 164, or encoding a heavy chain variable region of an antibody or antibody fragment having the amino acid sequence of SEQ ID NO: 166, 168, 170 or 172.

40) The isolated polynucleotide according to claim 39, wherein said polynucleotide comprises a sequence encoding a light chain of an antibody having the amino acid sequence of SEQ ID NO:174 or 180, or encoding a heavy chain of an antibody having the amino acid sequence of SEQ ID NO:176 or 178.