CLAIMS

~~[Claim 1]~~

~~An antibody binding to human XCR1, wherein the antibody binds to linear or discontinuous epitopes which comprise at least three amino acids selected from the group consisting of the 8th, 11th, 12th, 13th, 14th, 16th, 17th, 22nd, 23rd, 176th, and 177th amino acids in the amino acid sequence of SEQ ID NO: 91.~~

~~[Claim 2]~~

~~The antibody according to Claim 1, wherein the antibody is:~~

~~the antibody comprising a heavy chain variable region comprising heavy chain CDRs 1 to 3 described in (g) to (1) below and a light chain variable region comprising light chain CDRs 1 to 3 described in (j) to (1) below;~~

~~the antibody comprising a heavy chain variable region comprising heavy chain CDRs 1 to 3 described in (m) to (o) below and a light chain variable region comprising light chain CDRs 1 to 3 described in (p) to (r) below; or~~

~~the antibody comprising a heavy chain variable region comprising heavy chain CDRs 1 to 3 described in (a) to (c) below and a light chain variable region comprising light chain CDRs 1 to 3 described in (d) to (f) below:~~

~~(a) a heavy chain CDR 1 consisting of the amino acid sequence of SEQ ID NO: 41,~~

~~(b) a heavy chain CDR 2 consisting of the amino acid sequence of SEQ ID NO: 42,~~

~~(c) a heavy chain CDR 3 consisting of the amino acid sequence of SEQ ID NO: 43;~~

~~(d) a light chain CDR 1 consisting of the amino acid sequence of SEQ ID NO: 44,~~

~~(e) a light chain CDR 2 consisting of the amino acid sequence of SEQ ID NO: 45, and~~

~~(f) a light chain CDR 3 consisting of the amino acid sequence of SEQ ID NO: 46;~~

~~(g) a heavy chain CDR 1 consisting of the amino acid sequence of SEQ ID NO: 17,~~

~~(h) a heavy chain CDR 2 consisting of the amino acid sequence of SEQ ID NO: 18,~~

~~(i) a heavy chain CDR 3 consisting of the amino acid sequence of SEQ ID NO: 19;~~

~~(j) a light chain CDR 1 consisting of the amino acid sequence of SEQ ID NO: 20,~~

~~(k) a light chain CDR 2 consisting of the amino acid sequence of SEQ ID NO: 21,~~

~~(1) a light chain CDR 3 consisting of the amino acid sequence of SEQ ID NO: 22;~~

~~(m) a heavy chain CDR 1 consisting of the amino acid sequence of SEQ ID NO: 29,~~

~~(n) a heavy chain CDR 2 consisting of the amino acid sequence of SEQ ID NO: 30,~~

~~(o) a heavy chain CDR 3 consisting of the amino acid sequence of SEQ ID NO: 31;~~

~~(p) a light chain CDR 1 consisting of the amino acid sequence of SEQ ID NO: 32,~~

~~(q) a light chain CDR 2 consisting of the amino acid sequence of SEQ ID NO: 33, and~~

~~(r) a light chain CDR 3 consisting of the amino acid sequence of SEQ ID NO: 34.~~

~~[Claim 3]~~

~~The antibody according to Claim 1 or 2, wherein the antibody comprises a heavy chain variable region comprising an amino acid sequence of SEQ ID NO: 60 or 64, and a light chain variable region comprising an amino acid sequence of SEQ ID NO: 68 or 72.~~

~~[Claim 4]~~

~~The antibody according to any one of Claim 1 to 3, wherein the antibody comprises a heavy chain variable region comprising an amino acid sequence of SEQ ID NO: 60, and a~~

~~light chain variable region comprising an amino acid sequence of SEQ ID NO: 68.~~

~~[Claim 5]~~

~~The antibody according to any one of Claims 1 to 3, wherein the antibody comprises a heavy chain variable region comprising an amino acid sequence of SEQ ID NO: 64, and a light chain variable region comprising an amino acid sequence of SEQ ID NO: 72.~~

~~[Claim 6]~~

~~The antibody according to any one of Claims 1 to 5, wherein the antibody comprises a human constant region.~~

~~[Claim 7]~~

~~The antibody according to any one of Claims 1 to 6, wherein the antibody comprises a heavy chain comprising an amino acid sequence of SEQ ID NO: 59, and a light chain comprising an amino acid sequence of SEQ ID NO: 67.~~

~~[Claim 8]~~

~~The antibody according to any one of Claim 1 to 6, wherein the antibody comprises a heavy chain comprising an amino acid sequence of SEQ ID NO: 63, and a light chain comprising an amino acid sequence of SEQ ID NO: 71.~~

~~[Claim 9]~~

~~The antibody according to any one of Claims 1 to 8 comprising an Fc region, wherein the Fc region is mutated to induce a change in ADCC activity.~~

~~[Claim 10]~~

~~The antibody according to Claim 9, wherein the Fc region is mutated to lower ADCC activity.~~

~~[Claim 11]~~

~~The antibody according to any one of Claims 1 to 10, wherein the antibody is conjugated to a cytotoxic molecule.~~

~~[Claim 12]~~

~~The antibody according to any one of Claims 1 to 11, wherein the antibody inhibits interaction between human XCR1 and human XCL1.~~

~~[Claim 13]~~

~~The antibody according to any one of Claims 1 to 12, wherein the antibody inhibits cell migration of dendritic cells.~~

~~[Claim 14]~~

~~The antibody according to any one of Claims 1 to 13, wherein the antibody suppresses the activity of cytotoxic T lymphocytes .~~

~~[Claim 15]~~

~~A pharmaceutical composition comprising the antibody according to any one of Claims 1 to 14 and a pharmaceutically acceptable carrier or additive.~~

~~[Claim 16]~~

~~The pharmaceutical composition according to Claim 15, wherein the pharmaceutical composition is a therapeutic agent for an immune disease.~~

~~[Claim 17]~~

~~The pharmaceutical composition according to Claim 16, wherein the immune disease is an immune disease of the skin.~~

~~[Claim 18]~~

~~The pharmaceutical composition according to Claim 17, wherein the immune disease of the skin is psoriasis, parapsoriasis, atopic dermatitis, contact dermatitis, dermatomyositis , polymyositis, inclusion body myositis, autoimmune blistering disease (pemphigus, pemphigoid, or acquired epidermolysis bullosa), pustulosis, herpes gestationis, linear IgA bullous dermatosis, alopecia areata, vitiligo vulgaris, skin disease associated with collagenosis (systemic lupus erythematosus, Sjogren syndrome, or mixed connective tissue disease), skin disease associated with Addison's disease, skin disease associated with graft-versus-host disease (GVHD) , eczema, or urticaria.~~

~~[Claim 19]~~

~~The pharmaceutical composition according to Claim 17, wherein the immune disease of the skin is psoriasis, atopic dermatitis, contact dermatitis, dermatomyositis, polymyositis, or inclusion body myositis.~~

~~[Claim 20]~~

~~The pharmaceutical composition according to Claim 17, wherein the immune disease of the skin is atopic dermatitis or contact dermatitis.~~

~~[Claim 21]~~

~~The pharmaceutical composition according to Claim 16, wherein the immune disease is thyroiditis, rheumatoid arthritis, type 1 diabetes, or multiple sclerosis.~~

~~[Claim 22]~~

~~A nucleic acid comprising a nucleotide sequence encoding the antibody according to any one of Claims 1 to~~

~~[Claim 23]~~

~~A method of treating an immune disease comprising administering an effective amount of the antibody according to~~

~~any one of Claims 1 to 14 or the pharmaceutical composition according to Claim 15 to a human affected by an immune disease.~~

~~[Claim 24]~~

~~The method according to Claim 23, wherein the immune disease is an immune disease of the skin.~~

~~[Claim 25]~~

~~The method according to Claim 24, wherein the immune disease of the skin is psoriasis, parapsoriasis, atopic dermatitis, contact dermatitis, dermatomyositis , polymyositis, inclusion body myositis, autoimmune blistering disease (pemphigus, pemphigoid, or acquired epidermolysis bullosa), pustulosis, herpes gestationis, linear IgA bullous dermatosis, alopecia areata, vitiligo vulgaris, skin disease associated with collagenosis (systemic lupus erythematosus, Sj6gren syndrome, or mixed connective tissue disease), skin disease associated with Addison's disease, skin disease associated with graft-versus-host disease (GVHD), eczema, or urticaria.~~

~~[Claim 26]~~

~~The method according to Claim 24, wherein the immune disease of the skin is psoriasis, atopic dermatitis, contact dermatitis, dermatomyositis, polymyositis, or inclusion body myositis .~~

~~[Claim 27]~~

~~The method according to Claim 23, wherein the immune disease is thyroiditis, rheumatoid arthritis, type 1 diabetes, multiple sclerosis.~~

1. An antibody that binds to human XCR1, wherein the antibody comprises (i) a heavy chain variable region comprising a heavy chain complementarity determining region (CDR) 1 consisting of

the amino acid sequence of SEQ ID NO:17, a heavy chain CDR 2 consisting of the amino acid sequence of SEQ ID NO:18, and a heavy chain CDR 3 consisting of the amino acid sequence of SEQ ID NO:19; and (ii) a light chain variable region comprising a light chain CDR 1 consisting of the amino acid sequence of SEQ ID NO:20, a light chain CDR 2 consisting of the amino acid sequence of SEQ ID NO:21, and a light chain CDR 3 consisting of the amino acid sequence of SEQ ID NO:22.

2. The antibody according to claim 1, wherein the heavy chain variable region comprises the amino acid sequence of SEQ ID NO: 60 or 64, and the light chain variable region comprises the amino acid sequence of SEQ ID NO: 68 or 72.

3. The antibody according to claim 1, wherein the heavy chain variable region comprises the amino acid sequence of SEQ ID NO: 60, and the light chain variable region comprises the amino acid sequence of SEQ ID NO: 68.

4. The antibody according to claim 1, wherein the heavy chain variable region comprises the amino acid sequence of SEQ ID NO: 64, and the light chain variable region comprises the amino acid sequence of SEQ ID NO: 72.

5. The antibody according to claim 1, wherein the antibody comprises a human constant region.

6. The antibody according to claim 1, wherein the antibody comprises a heavy chain comprising the amino acid sequence of SEQ ID NO: 59, and a light chain comprising the amino acid sequence of SEQ ID NO: 67.

7. The antibody according to claim 1, wherein the antibody comprises a heavy chain comprising the amino acid sequence of SEQ ID NO: 63, and a light chain comprising the amino acid sequence of SEQ ID NO: 71.

8. The antibody according to claim 1, comprising an Fc region, wherein the Fc region is mutated to induce a change in antibody-dependent cellular cytotoxicity (ADCC) activity.

9. The antibody according to claim 8, wherein the Fc region is mutated to lower ADCC activity.

10. The antibody according to claim 1, wherein the antibody is conjugated to a cytotoxic molecule.

11. The antibody according to claim 1, wherein the antibody inhibits interaction between human XCR1 and human XCL1.

12. The antibody according to claim 1, wherein the antibody inhibits cell migration of dendritic cells.

13. The antibody according to claim 1, wherein the antibody suppresses the activity of cytotoxic T lymphocytes.

14. A pharmaceutical composition comprising the antibody according to claim 1 and a pharmaceutically acceptable carrier or additive.

15. The antibody according to claim 1, wherein the antibody is a humanized antibody.

16. An antibody that binds to human XCR1, wherein the antibody comprises (i) a heavy chain variable region comprising a heavy chain complementarity determining region (CDR) 1 consisting of the amino acid sequence of SEQ ID NO:41, a heavy chain CDR 2 consisting of the amino acid sequence of SEQ ID NO:42, and a heavy chain CDR 3 consisting of the amino acid sequence of SEQ ID NO:43; and (ii) a light chain variable region comprising a light chain CDR 1 consisting of the amino acid sequence of SEQ ID NO:44, a light chain CDR 2 consisting of the amino acid sequence of SEQ ID NO:45, and a light chain CDR 3 consisting of the amino acid sequence of SEQ ID NO:46.

17. A pharmaceutical composition comprising the antibody according to claim 16 and a pharmaceutically acceptable carrier or additive.

18. The antibody according to claim 16, wherein the antibody is a humanized antibody.

19. An antibody that binds to human XCR1, wherein the antibody comprises (i) a heavy chain variable region comprising a heavy chain complementarity determining region (CDR) 1 consisting of the amino acid sequence of SEQ ID NO:29, a heavy chain CDR 2 consisting of the amino acid sequence of SEQ ID NO:30, and a heavy chain CDR 3 consisting of the amino acid sequence of SEQ ID NO:31; and (ii) a light chain variable region comprising a light chain CDR 1 consisting of the amino acid sequence of SEQ ID NO:32, a light chain CDR 2 consisting of the amino acid sequence of SEQ ID NO:33, and a light chain CDR 3 consisting of the amino acid sequence of SEQ ID NO:34.

20. A pharmaceutical composition comprising the antibody according to claim 19 and a pharmaceutically acceptable carrier or additive.

21. The antibody according to claim 19, wherein the antibody is a humanized antibody.