producing a hybridoma by fusing a spleen cell from said immunized mouse with a myeloma cell; e) selecting a hybridoma producing an antibody having the characteristics of the antibody of the claimed disclosure; and f) isolating said antibody.

[0023] The present disclosure includes a method for inhibiting IgE antibody production in a patient, which comprises administrating to the patient an effective amount of an IgE antibody production inhibiting effective amount of an antibody according to the claimed disclosure. The inhibition of IgE antibody production may prevent bronchial asthma, allergic rhinitis, allergic dermatitis, and anaphylaxis, and also treat bronchial asthma, allergic rhinitis, uticaria, and atopic dermatitis.

[0023a] In one aspect, the present disclosure refers to the pharmaceutical composition disclosed herein, for use in the treatment of bronchial asthma, allergic asthma, nonallergic asthma, allergic rhinitis, atopic dermatitis, allergic dermatitis, allergic conjunctivitis, eczema, urticaria, food allergies, chronic obstructive pulmonary disease, ulcerative colitis, RSV infection, uveitis, scleroderma, or osteoporosis.

[0023b] In one aspect, the present disclosure refers to the pharmaceutical composition disclosed herein, for use in the treatment of idiopathic pulmonary fibrosis or inflammatory and fibrotic lung disease.

[0023c] In one aspect, the present disclosure refers to the use of the pharmaceutical composition disclosed herein, in the manufacture of a medicament for the treatment of bronchial asthma, allergic asthma, nonallergic asthma, allergic rhinitis, atopic dermatitis, allergic dermatitis, allergic conjunctivitis, eczema, urticaria, food allergies, chronic obstructive pulmonary disease, ulcerative colitis, RSV infection, uveitis, scleroderma, or osteoporosis.

[0023d] In one aspect, the present disclosure refers to the use of the pharmaceutical composition disclosed herein, in the manufacture of a medicament for the treatment of idiopathic pulmonary fibrosis or inflammatory and fibrotic lung disease.

[0024] The present disclosure includes a method of treating an IL13-mediated disorder in a patient, comprising administering to the patient an effective amount of an antibody or antigen-binding fragment thereof according to the claimed disclosure, wherein said antibody or antigen-binding fragment thereof inhibits binding of IL13 to its receptor and inhibits one or more functions associated with binding of the interleukin to said receptor.

[0025] The present disclosure includes a method of treating an IgE-mediated disorder in a patient, comprising administering to the patient an effective amount of an antibody or antigen-binding fragment thereof according to the claimed disclosure, wherein said antibody or antigen-binding fragment thereof inhibits binding of IL13 to its receptor and inhibits one or more functions associated with binding of the interleukin to said receptor.

[0026] The present disclosure includes a method for reducing the severity of asthma in a mammal comprising administering to the mammal a therapeutically effective amount of an anti-IL13 monoclonal antibody having at least one of the following characteristics: the ability to bind human IL13 with a K_D between about $1X10^{10}$ to about $1X\ 10^{12}$ M; the ability to inhibit one or more functions associated with binding of the interleukin IL13 to the IL13 receptor; and the inability of the antibody does to bind to mouse IL13.

[0027] Diseases and/or conditions mediated by IL13 that are contemplated by the disclosure include, but are not limited to, allergic asthma, non-allergic (intrinsic) asthma, allergic rhinitis, atopic dermatitis, allergic conjunctivitis, eczema, urticaria, food allergies, chronic obstructive pulmonary disease, ulcerative colitis, RSV infection, uveitis, scleroderma, and osteoporosis .

Brief Description of the Drawings

[0028] FIGURE 1 depicts the binding of anti-IL13 monoclonal antibodies to human IL13.

[0029] FIGURE 2 depicts the binding of anti-IL13 monoclonal antibodies mutant IL13-Fc.

[0030] FIGURE 3 illustrates that there is no inhibition of MAb 228B/C-1 binding to human IL13 by MAb JES10-5A2 (Pharmingen).

[0031] FIGURE 4 illustrates the effect of anti-IL13 monoclonal antibodies on the proliferation of Hodgkin Lymphoma L-1236 cells.

[0032] FIGURE 5 illustrates the effect of anti-IL13 monoclonal antibodies on IL13-induced suppression of CD14 expression in human monocytes.

[0033] FIGURE 6 illustrates the effect of anti-IL13 monoclonal antibodies on IL13-induced up-regulation of CD23 expression in human monocytes.

Claims

1. A pharmaceutical composition comprising an antagonistic anti-human IL13 antibody or antigen-binding fragment thereof that binds specifically to human IL13 and a physiologically acceptable carrier, wherein said anti-human IL13 antibody comprises a variable heavy chain region comprising the complementarity determining regions CDRH1, CDRH2 and CDRH3 having the amino acid sequences of SEQ ID NO: 117, SEQ ID NO: 123, and SEQ ID NO: 135, respectively, and a variable light chain region comprising the complementarity determining regions CDRL1, CDRL2 and CDRL3 having the amino acid sequences of SEQ ID NO: 99, SEQ ID NO: 104, and SEQ ID NO: 115, respectively, and wherein said anti-human IL13 antibody or functional fragment thereof is formulated to be administered intraperitoneally, intramuscularly, subcutaneously or orally.

2. The pharmaceutical composition of claim 1, wherein said anti-human IL13 antibody is a humanized antibody.

3. The pharmaceutical composition of claim 1 or 2, wherein said anti-human IL13 antibody comprises a variable heavy chain region comprising an amino acid sequence having the formula: FRH1-CDRH1-FRH2-CDRH2-FRH3-CDRH3-FRH4, wherein FRH1 consists of SEQ ID NO:65; CDRH1 consists of SEQ ID NO:117; FRH2 consists of SEQ ID NO:68; CDRH2 consists of SEQ ID NO:123; FRH3 consists of SEQ ID NO:80; CDRH3 consists of SEQ ID NO:135; and FRH4 consists of SEQ ID NO:92 and a variable light chain region comprising an amino acid sequence having the formula: FRL1-CDRL1-FRL2-CDRL2-FRL3-CDRL3-FRL4, wherein FRL1 consists of SEQ ID NO:21; CDRL1 consists of SEQ ID NO:99; FRL2 consists of SEQ ID NO:29; CDRL2 consists of SEQ ID NO:104; FRL3 consists of SEQ ID NO:31; CDRL3 consists of SEQ ID NO:115; and FRL4 consists of SEQ ID NO:58.

4. The pharmaceutical composition of any one of claims 1 to 3, wherein said anti-human IL13 antibody comprises a variable light chain region comprising the amino acid sequence of SEQ ID NO:142 and a variable heavy chain region comprising the amino acid sequence of SEQ ID NO:143.

5. The pharmaceutical composition of any one of claims 1 to 4, wherein said anti-human IL13 antibody or antigen binging fragment thereof binds specifically and with high affinity to both glycosylated and non-glycosylated human IL13, does not bind mouse IL13, and neutralizes human IL13 activity at an approximate molar ratio of 1:2 (MAb:IL13).

6. The pharmaceutical composition of any one of claims 1 to 5, wherein said anti-human IL13 antibody or antigen binding fragment thereof binds to the same epitope as the antibody produced by hybridoma 228B/C-1 (PTA-5657).

7. The pharmaceutical composition of any one of claims 1 to 6, wherein said anti-human IL13 antibody is a monoclonal antibody.

8. The pharmaceutical composition of any one of claims 1 to 7, wherein said anti-IL13 antibody is a monovalent antibody, a multispecific antibody, a single chain antibody, a Fab fragment, or a F(ab') fragment.

9. The pharmaceutical composition of any one of claims 1 to 8, wherein said anti-human-IL13 antibody is a multispecific antibody which is a bispecific antibody.

10. The pharmaceutical composition of any one of claims 1 to 9, for use in the treatment of bronchial asthma, allergic asthma, nonallergic asthma, allergic rhinitis, atopic dermatitis, allergic dermatitis, allergic conjunctivitis, eczema, urticaria, food allergies, chronic obstructive pulmonary disease, ulcerative colitis, RSV infection, uveitis, scleroderma, or osteoporosis.

11. The pharmaceutical composition of any one of claims 1 to 9, for use in the treatment of idiopathic pulmonary fibrosis or inflammatory and fibrotic lung disease.

12. Use of the pharmaceutical composition of any one of claims 1 to 9, in the manufacture of a medicament for the treatment of bronchial asthma, allergic asthma, nonallergic asthma, allergic rhinitis, atopic dermatitis, allergic dermatitis, allergic conjunctivitis, eczema, urticaria, food allergies, chronic obstructive pulmonary disease, ulcerative colitis, RSV infection, uveitis, scleroderma, or osteoporosis.

13. Use of the pharmaceutical composition of any one of claims 1 to 9, in the manufacture of a medicament for the treatment of idiopathic pulmonary fibrosis or inflammatory and fibrotic lung disease.