CLAIMS

1. Use of an anti-IL-4Rα antibody for the manufacture of a medicament for the treatment of a subject exhibiting at least one symptom of an anti-interleukin-4 receptor alpha (IL-4Rα)-related disorder selected from arthritis, a lung-related disorder, a blood-related disorder, an eye-related disorder, an esophageal-related disorder, a gastrointestinal-related disorder, a kidney-related disorder, a prostate-related disorder, Kawasaki's disease, a thyroid-related disorder, a blood-vessel-related disorder, a pregnancy-related disorder, or a cancer, comprising the steps of:

(a) selecting a characteristic or a plurality of characteristics related to an IL-4/IL-13 pathway in a set of data representing medical records of a plurality of patients;

(b) clustering, by a computer system, in accordance with the characteristic or the plurality of characteristics related to the IL-4/IL-13 pathway, a subset of patients from the plurality of patients, wherein the subset comprises the characteristic or the plurality of characteristics;

(c) identifying in the subset clustered in step (b) the IL-4Rα-related disorder based on symptoms associated with the characteristic or the plurality of characteristics related to the IL-4/IL-13 pathway;

(d) selecting the subject exhibiting at least one symptom of the IL-4Rα-related disorder identified in step (c), with the proviso that the IL-4Rα-related disorder is not selected from the group consisting of atopic dermatitis, asthma, chronic rhinosinusitis with nasal polyposis, eosinophilic esophagitis, peanut allergy, grass allergy, chronic obstructive pulmonary disease (COPD), prurigo nodularis, bullous pemphigoid, chronic spontaneous urticaria (CSU) and allergic bronchopulmonary aspergillosis (ABPA); and

(e) administering a therapeutically effective amount of the anti-IL-4Rα antibody to the subject,

wherein the anti-IL-4Rα antibody comprises:

a variable heavy chain CDR1 of SEQ ID NO:1 (GFTFRDYA);

a variable heavy chain CDR2 of SEQ ID NO:2 (ISGSGGNT);

a variable heavy chain CDR3 of SEQ ID NO:3 (AKDRLSITIRPRYYGLDV);

a variable light chain CDR1 of SEQ ID NO:4 (QSLLYSIGYNY);

a variable light chain CDR2 of SEQ ID NO:5 (LGS); and

a variable light chain CDR3 of SEQ ID NO:6 (MQALQTPYT).

2. Use of an anti-IL-4Rα antibody for the manufacture of a medicament for the treatment of a subject exhibiting at least one symptom of a disorder selected from the group consisting of ~~arthritis~~, a lung-related disorder, a blood-related disorder, an eye-related disorder, an esophageal-related disorder, a gastrointestinal-related disorder, a kidney-related disorder, a prostate-related disorder, ~~Kawasaki's disease,~~ a thyroid-related disorder, a blood-vessel-related disorder, a pregnancy-related disorder, and a cancer with the proviso that the IL-4Rα-related disorder is not selected from the group consisting of atopic dermatitis, asthma, chronic rhinosinusitis with nasal polyposis, eosinophilic esophagitis, peanut allergy, grass allergy, chronic obstructive pulmonary disease (COPD), prurigo nodularis, bullous pemphigoid, chronic spontaneous urticaria (CSU) and allergic bronchopulmonary aspergillosis (ABPA),

wherein the anti-IL-4Rα antibody comprises:

a variable heavy chain CDR1 of SEQ ID NO:1 (GFTFRDYA);

a variable heavy chain CDR2 of SEQ ID NO:2 (ISGSGGNT);

a variable heavy chain CDR3 of SEQ ID NO:3 (AKDRLSITIRPRYYGLDV);

a variable light chain CDR1 of SEQ ID NO:4 (QSLLYSIGYNY);

a variable light chain CDR2 of SEQ ID NO:5 (LGS); and

a variable light chain CDR3 of SEQ ID NO:6 (MQALQTPYT).

3. The use of claim 1, wherein the IL-4Rα-related disorder is arthritis.

4. The use of claim 1 or 2, wherein the lung-related disorder is lung fibrosis or lung cirrhosis.

5. The use of claim 1 or 2, wherein the lung-related disorder is chronic fibrotic lung disease, cystic fibrosis, allergic bronchopulmonary mycosis, bleomycin-induced pneumopathy and fibrosis, pulmonary alveolar proteinosis, adult respiratory distress syndrome, sarcoidosis, tuberculosis, aspirin-exacerbated respiratory disease, or a combination thereof.

6. The use of claim 1 or 2 , wherein the blood-related disorder is lupus (systemic lupus erythematosus), antiphospholipid antibody syndrome (APS), or a combination thereof.

7. The use of claim 1 or 2, wherein the eye-related disorder is dry eye, blepharitis, blepharoconjunctivitis, cicatricial pemphigoid, Mooren's corneal ulcer, Vogt-Koyanagi-Harada syndrome, sympathetic opthalmia, phacoanaphylaxis endophthalmitis, keratoconjunctivitis sicca (KCS), atopic keratoconjunctivitis (AKC), or a combination thereof.

8. The use of claim 1 or 2, wherein the esophageal-related disorder is eosinophilic gastritis, achalasia, gastroesophageal reflux disease (GERD), or a combination thereof.

9. The use of claim 1 or 2, wherein the gastrointestinal-related disorder is Behçet's disease, Wegener granulomatosis GERD, or a combination thereof.

10. The use of claim 1 or 2, wherein the kidney-related disorder is glomerulonephritis, Goodpasture syndrome, or a combination thereof.

11. The use of claim 1 or 2, wherein prostate-related disorder is chronic prostatitis syndrome.

12. The use of claim 1 , wherein the IL-4Rα-related disorder is Kawasaki's disease.

13. The use of claim 1 or 2, wherein the pregnancy-related disorder is antiphospholipid syndrome, immune thrombocytopenia, or a combination thereof.

14. The use of claim 1 or 2, wherein the cancer is cutaneous T-cell lymphomas.

15. The use of any one of the preceding claims, wherein the anti-IL-4Rα antibody comprises a heavy chain variable region (VH) comprising the amino acid sequence of SEQ ID NO:13 and a light chain variable region (VL) comprising the amino acid sequence of SEQ ID NO:14.

16. The use of any one of the preceding claims, wherein the subject is human.

17. The use of any one of the preceding claims, wherein the administering is intradermal, intramuscular, intraperitoneal, intravenous, subcutaneous, intranasal, or epidural administration.

18. The use of any one of the preceding claims, wherein the administering is via a pre-filled syringe, a pre-filled pen, or an autoinjector.

19. The use of any one of the preceding claims, wherein the anti-IL-4Rα antibody is administered over multiple doses.

20. The use of any one of the preceding claims, wherein the anti-IL-4Rα antibody is administered at a dose of about 0.0001 to about 10 mg/kg of patient body weight.

21. The use of any one of the preceding claims, further comprising administering a second therapeutic agent selected from a second antibody or antigen binding fragment thereof, a soluble cytokine receptor, an IgE antagonist, an anti-asthma medication, or a checkpoint inhibitor,

wherein the anti-asthma medication is corticosteroids, non-steroidal agents, beta agonists, leukotriene antagonists, xanthines, fluticasone, salmeterol, or albuterol, and/or wherein the checkpoint inhibitor is a PD-1 antagonist, a PD-L1 antagonist, or a CTLA-4 antagonist.