What is claimed is:

1. A method for treating nasal polyposis, the method comprising administering to a subject in need thereof a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variably region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2.

2. The method of claim 1, wherein the antibody or antigen binding fragment thereof comprises light chain CDR sequences of SEQ ID NOs:6, 7, and 8, and heavy chain CDR sequences of SEQ ID NOs:3, 4 and 5.

3. The method of claim 1, wherein the subject has one or more of sinusitis, rhinitis, asthma, aspirin hypersensitivity, non-steroidal anti-inflammatory drug (NSAID) hypersensitivity, or has undergone surgery for nasal polyps.

4. The method of claim 1, wherein the subject has chronic rhinosinusitis.

5. The method of claim 1, wherein the antibody or antigen binding fragment thereof is administered at a dose of 0.1 mg to 600 mg.

6. The method of claim 5, wherein the antibody or antigen binding fragment thereof is administered at a dose of 100 mg to 400 mg.

7. The method of claim 5, wherein the antibody or antigen binding fragment thereof is administered at a dose of 300 mg.

8. The method of claim 1, wherein the antibody or antigen-binding fragment thereof comprises an HCVR having the amino acid sequence of SEQ ID NO:1 and an LCVR having the amino acid sequence of SEQ ID NO:2.

9. The method of claim 1, wherein the antibody is dupilumab or an antigen binding fragment thereof.

10. The method of claim 1, wherein the pharmaceutical composition is administered to the subject systemically or locally.

11. The method of claim 10, wherein the pharmaceutical composition is administered to the subject subcutaneously, intravenously, or intranasally.

12. The method of claim 1, wherein the pharmaceutical composition is administered to the subject subcutaneously at a dose of 300 mg.

13. The method of claim 1, wherein a second therapeutic agent is administered to the subject before, after or concurrent with the pharmaceutical composition.

14. The method of claim 13, wherein the second therapeutic agent is selected from the group consisting of an IgE inhibitor, an antibiotic agent, and an anti-fungal agent.

15. The method claim 13, wherein the second therapeutic agent comprises an intranasal corticosteroid.

16. The method of claim 15, wherein the intranasal corticosteroid is mometasone furoate nasal spray (MFNS).

17. The method of claim 15, wherein the second therapeutic agent comprises an inhaled corticosteroid.

18. The method of claim 17, wherein the inhaled corticosteroid is fluticasone or budesonide.

19. The method of claim 15, wherein the second therapeutic agent further comprises a long-acting $beta_2$ agonist.

20. The method of claim 19, wherein the long-acting $beta_2$ agonist is salmeterol or formoterol.

21. The method of claim 1, wherein administration of the antibody or antigen binding fragment thereof is followed by an improvement in one or more nasal polyposis associated parameters.

22. The method of claim 21, wherein the one or more nasal polyposis associated parameters are selected from the group consisting of:

a) 22-item SinoNasal Outcome Test (SNOT-22) score;

b) Nasal Symptom Score;

c) Number of nocturnal awakenings;

d) Visual Analog Score (VAS) for rhinosinusitis symptom severity;

e) Five-item Asthma Control Questionnaire (ACQ5) score;

f) Nasal peak inspiratory flow (NPIF) ;

g) University of Pennsylvania Smell Identification Test (UPSIT);

h) Lund-McKay Score; and

i) Three dimensional volumetric measurement of the maxillary sinus.

23. The method of claim 1, wherein administration of the antibody or antigen binding fragment thereof is followed by an increase in one or both of NPIF and UPSIT.

24. The method of claim 1, wherein administration of the antibody or antigen binding fragment thereof is followed by an decrease in one or more of SNOT-22 score, nasal symptom score, VAS, Lund-McKay Score and 3D-Volumetric Score.

25. The method of claim 1, wherein administration of the antibody or antigen binding fragment thereof is followed by a decrease in nasal polyp score in the patient.

26. A method for treating nasal polyposis, said method comprising: sequentially administering to a subject in need thereof a single initial dose of a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), followed by one or more secondary doses of the antibody or antigen binding fragment thereof, wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variably region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2.

27. The method of claim 26, wherein the antibody or antigen-binding fragment thereof that specifically binds IL-4R, comprises light chain CDR sequences of SEQ ID NOs:6, 7, and 8, and heavy chain CDR sequences of SEQ ID NOs:3, 4 and 5.

28. The method of claim 26, wherein the antibody or antigen-binding fragment thereof comprises an HCVR having the amino acid sequence of SEQ ID NO:1 and an LCVR having the amino acid sequence of SEQ ID NO:2.

29. The method of claim 26, wherein the antibody is dupilumab or an antigen binding fragment thereof.

30. The method of claim 26, wherein each secondary dose is administered 1 to 15 weeks after the immediately preceding dose.

31. The method of claim 26, wherein at least 3 secondary doses of the antibody or antigen binding fragment thereof are administered to the subject, and wherein each secondary dose is administered 1 week after the immediately preceding dose.

32. The method of claim 26, wherein the initial dose and the one or more secondary doses each comprise 50 mg to 500 mg of the antibody or antigen binding fragment thereof.

33. The method of claim 32, wherein the initial dose and the one or more secondary doses each comprise 100 mg to 400 mg of the antibody or antigen binding fragment thereof.

34. The method of claim 32, wherein the initial dose and the one or more secondary doses each comprise 300 mg of the antibody or antigen binding fragment thereof.

35. The method of claim 26, wherein the initial dose and the one or more secondary doses each comprise the same amount of the antibody or antigen binding fragment thereof.

36. The method of claim 26, wherein the initial dose comprises a first amount of the antibody or antigen binding fragment thereof, and the one or more secondary doses each comprise a second amount of the antibody or antigen binding fragment thereof.

37. The method of claim 36, wherein the first amount of the antibody or antigen binding fragment thereof is 1.5x, 2x, 2.5x, 3x, 3.5x or 5x the second amount of antibody or antigen binding fragment thereof.

38. The method of claim 36, wherein the first amount of the antibody or antigen binding fragment thereof is 2x the second amount of antibody or antigen binding fragment thereof.

39. The method of claim 26, wherein the subject has one or more of sinusitis, rhinitis, asthma, aspirin hypersensitivity, non-steroidal anti-inflammatory drug (NSAID) hypersensitivity, or has undergone surgery for nasal polyps.

40. The method of claim 26, wherein the subject has chronic rhinosinusitis.

41. The method of claim 26, wherein the initial dose and the secondary doses are administered by the same or different routes of administration.

42. The method of claim 26, wherein the initial dose and the secondary doses are administered by subcutaneously, intravenously, or intranasally.

43. The method of claim 26, wherein administration of the initial dose and the one or more secondary doses is followed by an improvement in one or more nasal polyposis associated parameters.

44. The method of claim 43, wherein the one or more nasal polyposis associated parameters are selected from the group consisting of:

a) 22-item SinoNasal Outcome Test (SNOT-22) score;

b) Nasal Symptom Score;

c) Number of nocturnal awakenings;

d) Visual Analog Score (VAS) for rhinosinusitis symptom severity;

e) Five-item Asthma Control Questionnaire (ACQ5) score;

f) Nasal peak inspiratory flow (NPIF) ;

g) University of Pennsylvania Smell Identification Test (UPSIT);

h) Lund-McKay Score; and

i) Three dimensional volumetric measurement of the maxillary sinus.

45. The method of claim 26, wherein administration of the antibody or antigen binding fragment thereof is followed by an increase in one or both of NPIF and UPSIT.

46. The method of claim 26, wherein administration of the antibody or antigen binding fragment thereof is followed by an decrease in one or more of SNOT-22 score, nasal symptom score, VAS, Lund-McKay Score and 3D-Volumetric Score.

47. The method of claim 26, wherein administration of the antibody or antigen binding fragment thereof is followed by a decrease in nasal polyp score in the patient.

48. The method of claim 26, wherein a second therapeutic agent is administered to the subject before, after or concurrent with the initial dose or the one or more secondary doses.

49. The method of claim 48, wherein the second therapeutic agent is selected from the group consisting of an IgE inhibitor, an antibiotic agent, and an anti-fungal agent.

50. The method claim 48, wherein the second therapeutic agent comprises an intranasal corticosteroid.

51. The method of claim 50, wherein the intranasal corticosteroid is mometasone furoate nasal spray (MFNS).

52. The method of claim 50, wherein the second therapeutic agent comprises an inhaled corticosteroid.

53. The method of claim 52, wherein the inhaled corticosteroid is fluticasone or budesonide.

54. The method of claim 50, wherein the second therapeutic agent further comprises a long-acting $beta_2$ agonist.

55. The method of claim 54, wherein the long-acting $beta_2$ agonist is salmeterol or formoterol.

56. A method for treating nasal polyposis, the method comprising:

a) selecting a patient with a minimum bilateral nasal polyp score of 5, or at least two or more of the chronic symptoms of sinusitis selected from the group consisting of: nasal blockade/obstruction/congestion, anterior or posterior nasal drip, facial pain or pressure, and reduction or loss of smell; and

b) administering to the selected patient a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variable region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2,

such that the patient's nasal polyp score is reduced or the two or more chronic symptoms of sinusitis are improved.

57. A method for treating nasal polyposis, said method comprising:

a) selecting a patient with a minimum bilateral nasal polyp score of 5, or at least two or more of the chronic symptoms of sinusitis selected from the group consisting of: nasal blockade/obstruction/congestion, anterior or posterior nasal drip, facial pain or pressure, and reduction or loss of smell; and

b) sequentially administering to the patient a single initial dose of a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), followed by one or more secondary doses of the antibody or antigen binding fragment thereof, wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variable region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2,

such that the patient's nasal polyp score is reduced or the two or more chronic symptoms of sinusitis are improved.

58. A method for treating nasal polyposis, the method comprising:

a) determining in a subject the expression level of one or more genes selected from the group consisting of thymus and activation-regulated chemokine (TARC), eotaxin-3, periostin, carcinoembryonic antigen (CEA), and YKL-40;

b) selecting the subject as a candidate for treatment with an antibody or an antigen binding fragment thereof that selectively binds to an interleukin-4 receptor (IL-4R) if the subject has an elevated expression level of the one or more genes; and

c) administering to the selected subject a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variable region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2,

such that the level of the one or more genes is reduced.

59. A method for treating nasal polyposis, said method comprising:

a) determining in a subject the expression level of one or more genes selected from the group consisting of thymus and activation-regulated chemokine (TARC), eotaxin-3, periostin, carcinoembryonic antigen (CEA), and YKL-40;

b) selecting the subject as a candidate for treatment with an antibody or an antigen binding fragment thereof that selectively binds to an interleukin-4 receptor (IL-4R) if the subject has an elevated expression level of the one or more genes; and

c) sequentially administering to the selected subject a single initial dose of a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), followed by one or more secondary doses of the antibody or antigen binding fragment thereof, wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variable region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2,

such that the level of the one or more genes is reduced.

60. A method for treating nasal polyposis, the method comprising:

a) determining in a subject the level of blood eosinophils or sputum eosinophils;

b) selecting the subject as a candidate for treatment with an antibody or an antigen binding fragment thereof that selectively binds to an interleukin-4 receptor (IL-4R) if the subject has an elevated level of blood eosinophils or sputum eosinophils; and

c) administering to the selected subject a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-

4R), wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variable region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2,

such that the level of blood eosinophils or sputum eosinophils is reduced.

61. A method for treating nasal polyposis, said method comprising:

a) determining in a subject the level of blood eosinophils or sputum eosinophils;

b) selecting the subject as a candidate for treatment with an antibody or an antigen binding fragment thereof that selectively binds to an interleukin-4 receptor (IL-4R) if the subject has an elevated level of blood eosinophils or sputum eosinophils; and

c) sequentially administering to the selected subject a single initial dose of a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), followed by one or more secondary doses of the antibody or antigen binding fragment thereof, wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variable region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2,

such that the level of blood eosinophils or sputum eosinophils is reduced.

CLAIMS

1. A method for treating nasal polyposis, the method comprising administering to a subject in need thereof a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variably region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs:1 and 2, wherein the method optionally treats bilateral nasal polyposis.

2. The method of claim 1, wherein the antibody or antigen binding fragment thereof comprises light chain CDR sequences of SEQ ID NOs: 6, 7, and 8, and heavy chain CDR sequences of SEQ ID NOs: 3, 4 and 5.

3. The method of claim 1, wherein the subject has one or more of sinusitis, rhinitis, asthma, aspirin hypersensitivity, non-steroidal anti-inflammatory drug (NSAID) hypersensitivity, has undergone surgery for nasal polyps, or has chronic rhinosinusitis.

4. The method of claim 1, wherein the antibody or antigen binding fragment thereof is administered at a dose of 0.1 mg to 600 mg, 100 mg to 400 mg, or 300 mg.

5. The method of claim 1, wherein the antibody or antigen-binding fragment thereof comprises an HCVR having the amino acid sequence of SEQ ID NO:1 and an LCVR having the amino acid sequence of SEQ ID NO:2.

6. The method of claim 1, wherein one or more of the following conditions are met:

(a) the pharmaceutical composition is administered to the subject systemically;

(b) the pharmaceutical composition is administered to the subject locally;

(c) the pharmaceutical composition is administered to the subject subcutaneously, intravenously, or intranasally; and

(d) the pharmaceutical composition is administered to the subject subcutaneously at a dose of 300 mg.

7. The method of claim 1, wherein a second therapeutic agent fulfills one or more of the following criteria:

(a) the second therapeutic agent is administered to the subject before, after or concurrent with the pharmaceutical composition;

(b) the second therapeutic agent is selected from the group consisting of an IgE inhibitor, an antibiotic agent, and an anti-fungal agent;

(c) the second therapeutic agent comprises an intranasal corticosteroid, optionally wherein the intranasal corticosteroid is mometasone furoate nasal spray (MFNS);

(d) the second therapeutic agent comprises an inhaled corticosteroid, optionally wherein the inhaled corticosteroid is fluticasone or budesonide; and

(e) the second therapeutic agent comprises a long-acting $beta_2$ agonist, optionally wherein the long-acting $beta_2$ agonist is salmeterol or formoterol.

8. The method of claim 1, wherein administration of the antibody or antigen binding fragment thereof is followed by an improvement in one or more nasal polyposis associated parameters selected from the group consisting of:

a) 22-item SinoNasal Outcome Test (SNOT-22) score;

b) Nasal Symptom Score;

c) Number of nocturnal awakenings;

d) Visual Analog Score (VAS) for rhinosinusitis symptom severity;

e) Five-item Asthma Control Questionnaire (ACQ5) score;

f) Nasal peak inspiratory flow (NPIF) ;

g) University of Pennsylvania Smell Identification Test (UPSIT);

h) Lund-McKay Score; and

i) Three dimensional volumetric measurement of the maxillary sinus.

9. The method of claim 1, wherein administration of the antibody or antigen binding fragment thereof is followed by a decrease in nasal polyp score in the patient.

10. A method for treating nasal polyposis, said method comprising: sequentially administering to a subject in need thereof a single initial dose of a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), followed by one or more secondary doses of the antibody or antigen binding fragment thereof, wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variably region (HCVR) and light chain variable

region (LCVR) sequence pair of SEQ ID NOs:1 and 2, wherein the method optionally treats bilateral nasal polyposis.

11. The method of claim 10, wherein the antibody or antigen-binding fragment thereof that specifically binds IL-4R, comprises light chain CDR sequences of SEQ ID NOs: 6, 7, and 8, and heavy chain CDR sequences of SEQ ID NOs: 3, 4 and 5.

12. The method of claim 10, wherein the antibody or antigen-binding fragment thereof comprises an HCVR having the amino acid sequence of SEQ ID NO:1 and an LCVR having the amino acid sequence of SEQ ID NO:2.

13. The method of claim 10, wherein the dosing strategy fulfills one or more of the following criteria:

(a) each secondary dose is administered 1 to 15 weeks after the immediately preceding dose;

(b) at least 3 secondary doses of the antibody or antigen binding fragment thereof are administered to the subject, wherein each secondary dose is administered 1 week or 2 weeks after the immediately preceding dose.

14. The method of claim 10, wherein the dosing strategy fulfills one or more of the following criteria:

(a) the initial dose and the one or more secondary doses each comprise 50 mg to 600 mg of the antibody or antigen binding fragment thereof;

(b) the initial dose and the one or more secondary doses each comprise 100 mg to 400 mg;

(c) the initial dose and the one or more secondary doses each comprise 300 mg; and

(d) the initial dose and the one or more secondary doses each comprise an equal amount of the antibody or antigen binding fragment thereof.

15. The method of claim 10, wherein the dosing strategy fulfills one or more of the following criteria:

(a) the initial dose comprises a first amount of the antibody or antigen binding fragment thereof, and the one or more secondary doses each comprise a second amount of the antibody or antigen binding fragment thereof; and

(b) the initial dose comprises a first amount of the antibody or antigen binding fragment thereof, and the one or more secondary doses each comprise a second amount of the antibody or antigen binding fragment thereof, wherein the first amount of the antibody or antigen binding fragment thereof is 1.5x, 2x, 2.5x, 3x, 3.5x or 5x the second amount of antibody or antigen binding fragment thereof; and

(c) the initial dose and the one or more secondary doses comprise equal amounts of the antibody or antigen binding fragment thereof.

16. The method of claim 10, wherein the subject has one or more of bilateral nasal polyposis, sinusitis, chronic rhinosinusitis, rhinitis, asthma, aspirin hypersensitivity, non-steroidal anti-inflammatory drug (NSAID) hypersensitivity, or has undergone surgery for nasal polyps.

17. The method of claim 10, wherein the initial dose and the secondary doses fulfill one or more of the following criteria:

(a) the initial dose and the secondary doses are administered by the same or different routes of administration;

(b) the initial dose and the secondary doses are administered by subcutaneously, intravenously, or intranasally.

18. The method of claim 10, wherein administration of the initial dose and the one or more secondary doses is followed by an improvement in one or more nasal polyposis associated parameters selected from the group consisting of:

a) 22-item SinoNasal Outcome Test (SNOT-22) score;

b) Nasal Symptom Score;

c) Number of nocturnal awakenings;

d) Visual Analog Score (VAS) for rhinosinusitis symptom severity;

e) Five-item Asthma Control Questionnaire (ACQ5) score;

f) Nasal peak inspiratory flow (NPIF) ;

g) University of Pennsylvania Smell Identification Test (UPSIT);

h) Lund-McKay Score; and

i) Three dimensional volumetric measurement of the maxillary sinus.

19. The method of claim 10, wherein the dosing strategy fulfills one or more of the following criteria:

(a) administration of the antibody or antigen binding fragment thereof is followed by a decrease in nasal polyp score in the patient;

(b) a second therapeutic agent is administered to the subject before, after or concurrent with the initial dose or the one or more secondary doses;

(c) a second therapeutic agent is administered to the subject before, after or concurrent with the initial dose or the one or more secondary doses, wherein the second therapeutic agent is selected from the group consisting of an IgE inhibitor, an antibiotic agent, and an anti-fungal agent;

(d) a second therapeutic agent is administered to the subject before, after or concurrent with the initial dose or the one or more secondary doses, wherein the second therapeutic agent comprises an intranasal corticosteroid, optionally wherein the intranasal corticosteroid is mometasone furoate nasal spray (MFNS);

(e) a second therapeutic agent is administered to the subject before, after or concurrent with the initial dose or the one or more secondary doses, wherein the second therapeutic agent comprises an inhaled corticosteroid, optionally wherein the inhaled corticosteroid is fluticasone or budesonide; and

(f) a second therapeutic agent is administered to the subject before, after or concurrent with the initial dose or the one or more secondary doses, wherein the second therapeutic agent further comprises a long-acting $beta_2$ agonist, optionally wherein the long-acting $beta_2$ agonist is salmeterol or formoterol.

20. A method for treating nasal polyposis, the method comprising:

a) selecting a patient based on one or more of the following standards:

i) a minimum bilateral nasal polyp score of 5;

ii) at least two or more of the chronic symptoms of sinusitis selected from the group consisting of: nasal blockade/obstruction/congestion, anterior or posterior nasal drip, facial pain or pressure, and reduction or loss of smell;

iii) an elevated level of one or more genes selected from the group consisting of thymus and activation-regulated chemokine (TARC), eotaxin-3, periostin, carcinoembryonic antigen (CEA), and YKL-40; and

iv) an elevated level of blood eosinophils or sputum eosinophils; and

b) administering to the selected patient one or more doses of a pharmaceutical composition comprising an antibody or antigen binding fragment thereof that specifically binds an interleukin-4 receptor (IL-4R), wherein the antibody or antigen binding fragment thereof comprises heavy chain and light chain CDR sequences from the heavy chain variable region (HCVR) and light chain variable region (LCVR) sequence pair of SEQ ID NOs: 1 and 2,

such that one or more of the following criteria are met:

i) the patient's nasal polyp score is reduced;

ii) the two or more chronic symptoms of sinusitis are improved;

iii) the level of one or more genes selected from the group consisting of thymus and activation-regulated chemokine (TARC), eotaxin-3, periostin, carcinoembryonic antigen (CEA), and YKL-40; and

iv: the level of blood eosinophils or sputum eosinophils is reduced when compared to the pre-administration level,

wherein the method optionally treats bilateral nasal polyposis.