CLAIMS:

1. A method of treating or preventing a respiratory condition and/or for treating an IgE-mediated allergy and/or for reducing an allergic response to an allergen and/or for inducing anergy to an allergen in a subject and/or improving lung function in a subject suffering from an allergy, the method comprising administering to the subject a population of cells enriched for STRO-1$^+$ cells and/or progeny thereof and/or soluble factors derived therefrom.

2. The method of claim 1, wherein the respiratory condition is an acute respiratory condition or a chronic respiratory condition.

3. The method of claim 1 or claim 2, wherein the respiratory condition is an inflammatory respiratory condition, an obstructive respiratory condition or a restrictive respiratory condition.

4. The method of claim 3, wherein the respiratory condition or allergy is an obstructive respiratory condition or allergy or an inflammatory lung condition or allergy.

5. The method of claim 4, wherein the respiratory condition is asthma.

6. The method of claim 5, wherein the asthma is acute asthma, chronic asthma, severe asthma and/or refractory asthma.

7. The method of claim 6, wherein the asthma is long acting beta agonist (LABA) refractory asthma or steroid refractory asthma.

8. The method of claim 3, wherein the respiratory condition is a restrictive respiratory condition.

9. The method of claim 8, wherein the respiratory condition is idiopathic pulmonary fibrosis.

10. The method of claim 1, wherein the condition is allergy to house dust mite allergen (HDM) or the allergen is HDM.

11. The method of any one of claims 1 to 10 comprising administering a population of cells enriched for STRO-1^{bright} cells and/or progeny thereof and/or soluble factors derived therefrom.

12. The method of any one of claims 1 to 11, wherein the population enriched for STRO-1^{+} cells and/or progeny thereof and/or soluble factors derived therefrom are administered systemically.

13. The method of claim 12, wherein the population enriched for STRO-1^{+} cells and/or progeny thereof and/or soluble factors derived therefrom are administered intravenously or intranasally.

14. The method of any one of claims 1 to 13, wherein the population and/or the progeny and/or the soluble factors are administered a plurality of times.

15. The method of any one of claims 1 to 14, comprising the subject and administering a further dose of the population and/or the progeny and/or the soluble factors when one or more of the following occurs:

(i) a subject begins to persistently wheeze and/or cough and/or have chest tightness and/or have difficulty breathing;

(ii) a subject shows one or more of the following when assessed by spirometer:

a) 20% difference on at least three days in a week for at least two weeks;

b) ≥20% improvement of peak flow following treatment with:

10 minutes of inhaled β-agonist;

six weeks of inhaled corticosteroid;

14 days of 30 mg prednisolone.

c) ≥20% decrease in peak flow following exposure to a trigger;

(iii) bronchoscopy showing abnormal cells and/or foreign substances and/or blockages in the respiratory tract of a subject; or

(iv) chest CT scan showing abnormalities of the blood vessels in the lungs, accumulation of blood or fluid in the lungs, bronchiectasis, pleural effusion or pneumonia.

16. The method of any one of claims 1 to 15 comprising administering a dose of the population and/or the progeny and/or the soluble factors sufficient to achieve one or more of the following:

(i) improved bronchial hyperresponsiveness;
(ii) reduced eosinophil infiltration of the lung or bronchoalveolar lavage fluid;
(iii) reduced neutrophil infiltration of the lung or bronchoalveolar lavage fluid;
(iv) reduced late asthmatic response;
(v) reduced early asthmatic response; and/or
(vi) reduced lung remodeling/fibrosis.

17. The method of any one of claims 1 to 16 comprising administering between 1 x 10^6 to 150 x 10^6 STRO-1^+ cells and/or progeny thereof.

18. The method of any one of claims 1 to 17 comprising administering a whole body dose of STRO-1^+ cells and/or progeny thereof and/or soluble factors derived therefrom.

19. The method of claim 18 comprising administering 150x10^6 STRO-1^+ cells and/or progeny thereof in 10mL to the subject.

20. The method of any one of claims 1 to 19, wherein the population enriched for STRO-1^+ cells and/or progeny cells are autogeneic or allogeneic and/or the soluble factors are derived from autogeneic or allogeneic cells.

21. The method of any one of claims 1 to 20, wherein the population enriched for STRO-1^+ cells and/or progeny cells have been culture expanded prior to administration and/or prior to obtaining the soluble factors.

22. The method of any one of claims 1 to 21, wherein the population enriched for STRO-1^+ cells are STRO-1^{bri}, and/or express tissue non-specific alkaline phosphatase (TNAP) and/or the progeny cells and/or soluble factors are derived from STRO-1^+ cells that are STRO-1^{bri} and/or express TNAP.

23. The method according to any one of claims 1 to 22, wherein the STRO-1^+ cells and/or progeny cells thereof and/or soluble factors derived therefrom are administered in the form of a composition comprising said STRO-1^+ cells and/or progeny cells thereof and/or soluble factors derived therefrom and a carrier and/or excipient.

24. A population of cells enriched for STRO-1$^+$ cells and/or progeny thereof and/or soluble factors derived therefrom for use in the treatment or prevention of a respiratory condition and/or for treating an IgE-mediated allergy and/or for reducing an allergic response to an allergen and/or for inducing anergy to an allergen and/or improving lung function in a subject suffering from an allergy.

25. Use of a population of cells enriched for STRO-1$^+$ cells and/or progeny thereof and/or soluble factors derived therefrom in the manufacture of a medicament for treating or preventing a respiratory condition in a subject and/or for treating an IgE-mediated allergy and/or for reducing an allergic response to an allergen and/or for inducing anergy to an allergen and/or improving lung function in a subject suffering from an allergy.

CLAIMS

1. Use of a population of human cells enriched for STRO-1^{bright} multipotential cells and/or culture-expanded cells thereof in the manufacture of a medicament for treating or preventing a respiratory condition in a human.

2. Use according to Claim 1, in which the respiratory condition is an IgE-mediated respiratory allergic response to an allergen that causes a respiratory condition in humans.

3. Use according to Claim 1, in which the respiratory condition is an acute respiratory condition or a chronic respiratory condition.

4. Use according to Claim 1 or 3, in which the respiratory condition is an inflammatory respiratory condition, an obstructive respiratory condition or a restrictive respiratory condition.

5. Use according to Claim 2 or 3, in which the respiratory condition or IgE-mediated respiratory allergic response is an obstructive respiratory condition or allergy or an inflammatory lung condition or allergy.

6. Use according to Claim 5, in which the respiratory condition is asthma.

7. Use according to Claim 6, in which the asthma is acute asthma, chronic asthma, severe asthma and/or refractory asthma.

8. Use according to Claim 7, in which the asthma is long acting beta agonist (LABA) refractory asthma or steroid refractory asthma.

9. Use according to Claim 4, in which the respiratory condition is a restrictive respiratory condition.

10. Use according to Claim 9, in which the respiratory condition is idiopathic pulmonary fibrosis.

11. Use according to Claim 2, in which the IgE-mediated allergic response is allergy to house dust mite allergen (HDM) or the allergen is HDM.

12. Use according to any preceding claim, in which the medicament is formulated to be administered systemically.

13. Use according to Claim 12, in which the medicament is formulated to be administered intravenously or intranasally.

14. Use according to any preceding claim, in which the medicament is formulated for administration a plurality of times.

15. Use according to any preceding claim, in which the treating or preventing comprises, administering to the human subject a further dose of the medicament when one or more of the following occurs:

(i) a subject begins to persistently wheeze and/or cough and/or have chest tightness and/or have difficulty breathing;

(ii) a subject shows one or more of the following when assessed by spirometer:

(a) 20% difference on at least three days in a week for at least two weeks;

(b) ≥20% improvement of peak flow following treatment with:

10 minutes of inhaled β-agonist;

six weeks of inhaled corticosteroid;

14 days of 30 mg prednisolone; or

(c) ≥20% decrease in peak flow following exposure to a trigger;

(iii) bronchoscopy showing abnormal cells and/or foreign substances and/or blockages in the respiratory tract of a subject; or

(iv) chest CT scan showing abnormalities of the blood vessels in the lungs, accumulation of blood or fluid in the lungs, bronchiectasis, pleural effusion or pneumonia.

16. Use according to any preceding claim, in which the treating or preventing comprises administering a dose of the population and/or the culture-expanded cells sufficient to achieve one or more of the following:

(i) improved bronchial hyperresponsiveness;

(ii) reduced eosinophil infiltration of the lung or bronchoalveolar lavage fluid;

(iii) reduced neutrophil infiltration of the lung or bronchoalveolar lavage fluid;

(iv) reduced late asthmatic response;

(v) reduced early asthmatic response; and/or

(vi) reduced lung remodeling/fibrosis.

17. Use according to any preceding claim, in which the treating or preventing comprises administering between 1 x 10^6 to 150 x 10^6 STRO-1^{bright} multipotential cells and/or culture-expanded cells thereof.

18. Use according to any preceding claim, in which the treating or preventing comprises administering a whole body dose of STRO-1^{bright} multipotential cells and/or culture-expanded cells thereof.

19. Use according to Claim 18, in which the treating or preventing comprises administering 150x10^6 STRO-1^{bright} cells and/or culture-expanded cells thereof in 10mL to the subject.

20. Use according to any preceding claim, in which the STRO-1^{bright} multipotential cells and/or culture-expanded cells thereof are autogeneic or allogeneic.

21. Use according to any preceding claim, in which the medicament comprises the culture-expanded cells.

22. Use according to any preceding claim, in which the STRO-1^{bright} cells express tissue non-specific alkaline phosphatase (TNAP).

23. Use according to any preceding claim, in which the medicament further comprises a carrier and/or excipient.

24. Use of a population of cells enriched for STRO-1^{bright} multipotential cells and/or culture-expanded cells thereof in the manufacture of a medicament for treating or preventing a respiratory condition in a subject and/or for treating an IgE-mediated allergy and/or for reducing an allergic response to an allergen and/or for inducing anergy to an allergen and/or improving lung function in a subject suffering from an allergy.