present invention has thus been completed.

[0012]

Specifically, the present invention provides as follows.

[1] A cell preparation for amelioration and/or treatment of chronic lung disease, comprising pluripotent stem cells positive for SSEA-3 isolated from mesenchymal tissue of a body or cultured mesenchymal cells.

[1a] Use of a cell preparation in the manufacture of a medicament for amelioration and/or treatment of chronic lung disease, wherein the cell preparation comprises pluripotent stem cells positive for SSEA-3 isolated from mesenchymal tissue of a body or cultured mesenchymal cells, wherein the pluripotent stem cells have all of the following properties:

(i) CD105 positive;

(ii) low or non-existent telomerase activity;

(iii) the ability to differentiate into any of the three germ layers;

(iv) no neoplastic proliferation; and

(v) self-renewal ability,

wherein the pluripotent stem cells are to be administered to subjects suffering from chronic lung disease via intravenous injection.

[2] The cell preparation according to [1] above, comprising a cell fraction wherein the pluripotent stem cells positive for SSEA-3 have been concentrated by external stress treatment.

[3] The cell preparation according to [1] or [2] above, wherein the pluripotent stem cells are CD105-positive.

[4] The cell preparation according to any one of [1] to [3] above, wherein the pluripotent stem cells are CD117-negative and CD146-negative.

[5] The cell preparation according to any one of [1] to [4] above, wherein the pluripotent stem cells are CD117-negative, CD146-negative, NG2-negative, CD34-negative, vWF-negative, and CD271-negative.

[6] The cell preparation according to any one of [1] to [5] above, wherein the pluripotent stem cells are CD34-negative, CD117-negative, CD146-negative, CD271-negative, NG2-negative, vWF-negative, Sox10-negative, Snai1-negative, Slug-negative, Tyrp1-negative, and Dct negative.

[7] The cell preparation according to any one of [1] to [6] above, wherein the pluripotent stem cells have all of the following properties:

(i) low or non-existent telomerase activity;

(ii) having the ability to differentiate into any of three germ layers;

(iii) exhibiting no neoplastic proliferation; and

(iv) having self-renewal ability.

[8] The cell preparation according to any one of [1] to [7] above, wherein the chronic lung disease is selected from the group consisting of bronchopulmonary dysplasia (BPD), Wilson-Mikity syndrome (WMS), persistent pulmonary hypertension of the newborn (PPHN), and hypertension of the newborn.

[9] The cell preparation according to any one of [1] to [8] above, wherein the pluripotent stem cells have the ability to engraft into lung tissue.

[10] The cell preparation according to any one of [1] to [9] above, which is to be administered to a human newborn, an infant, or a child as a subject with the pluripotent stem cells at from approximately 1×10^4 cells/individual to approximately 3×10^8 cells/individual, as a therapeutically effect amount.

[11] The cell preparation according to any one of [1] to [10] above, which is to be

Claims

1. Use of a cell preparation in the manufacture of a medicament for amelioration and/or treatment of chronic lung disease, wherein the cell preparation comprises pluripotent stem cells positive for SSEA-3 isolated from mesenchymal tissue of a body or cultured mesenchymal cells, wherein the pluripotent stem cells have all of the following properties:

(i) CD105 positive;

(ii) low or non-existent telomerase activity;

(iii) the ability to differentiate into any of the three germ layers;

(iv) no neoplastic proliferation; and

(v) self-renewal ability,

wherein the pluripotent stem cells are to be administered to subjects suffering from chronic lung disease via intravenous injection.

2. The use according to claim 1, wherein the cell preparation comprises a cell fraction wherein the pluripotent stem cells positive for SSEA-3 have been concentrated by external stress treatment.

3. The use according to claims 1 or 2, wherein the pluripotent stem cells are CD117-negative and CD146-negative.

4. The use according to any one of claims 1 to 3, wherein the pluripotent stem cells are CD117-negative, CD146-negative, NG2-negative, CD34-negative, vWF-negative, and CD271-negative.

5. The use according to any one of claims 1 to 4, wherein the pluripotent stem cells are CD34-negative, CD117-negative, CD146-negative, CD271-negative, NG2-negative, vWF-negative, Sox10-negative, Snai1-negative, Slug-negative, Tyrp1-negative, and Dct negative.

6. The use according to any one of claims 1 to 5, wherein the chronic lung disease is selected from the group consisting of bronchopulmonary dysplasia (BPD), Wilson-Mikity syndrome (WMS), persistent pulmonary hypertension of the newborn (PPHN), and hypertension of the newborn.

7. The use according to any one of claims 1 to 6, wherein the pluripotent stem cells have the ability to engraft into lung tissue.

8. The use according to any one of claims 1 to 7, wherein the medicament is to be administered to a human newborn, an infant, or a child as a subject with the pluripotent stem cells at from approximately 1×10^4 cells/individual to approximately 3×10^8 cells/individual, as a therapeutically effect amount.

9. The use according to any one of claims 1 to 8, wherein the medicament is to be administered to a human newborn, an infant, or a child as a subject with the pluripotent stem cells in an amount of cells per body weight of approximately 3×10^4 cells/kg to approximately 3×10^7 cells/kg per individual subject, as a therapeutically effect amount.