WHAT IS CLAIMED IS:

1. A pharmaceutical composition comprising as an active ingredient an isolated population of cell suspension from a mammalian fetal pulmonary tissue, wherein said fetal pulmonary tissue comprises viable cells and is at a developmental stage corresponding to that of a human pulmonary organ/tissue at a gestational stage selected from a range of 20 to 22 weeks of gestation.

2. The pharmaceutical composition of claim 1, wherein said gestational stage is 20 to 21 weeks of gestation.

3. The pharmaceutical composition of claim 1, wherein said gestational stage is 21 to 22 weeks of gestation.

4. The pharmaceutical composition of claim 1, wherein said mammalian fetal pulmonary tissue is a human tissue.

5. The pharmaceutical composition of claim 1, wherein said isolated population of cell suspension comprises a heterogeneous population of cells.

6. The pharmaceutical composition of claim 1, wherein said isolated population of cell suspension comprises progenitor cells.

7. The pharmaceutical composition of claim 6, wherein said progenitor cells are selected from the group consisting of epithelial progenitor cells, mesenchymal progenitor cells and endothelial progenitor cells.

8. The pharmaceutical composition of claim 5, wherein said cells comprise a cytokeratin 5+ (CK5+) marker expression.

9. The pharmaceutical composition of claim 5, wherein said cells comprise a cytokeratin 5+ (CK5+) and cytokeratin 14+ (CK14+) marker expression.

10. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD45- CD34- CD31- CD326- CD271- marker expression.

11. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD34+ CD31+ marker expression.

12. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD34+ CD326+ marker expression.

13. The pharmaceutical composition of claim 5, wherein said cells comprise a CD34+ CD31+ CD14+ CD45+ marker expression.

14. The pharmaceutical composition of claim 5, wherein said cells comprise a CD34+ CD31+ CD45- CD105+ marker expression.

15. The pharmaceutical composition of claim 5, wherein said cells comprise a nestin+ and/or a calcitonin gene related protein+ (CGRP+) marker expression.

16. The pharmaceutical composition of claim 5, wherein said cells comprise an alpha smooth muscle actin+ (alpha-SMA+) and/or a Vimentin+ marker expression.

17. The pharmaceutical composition of claim 5, wherein said cells are capable of regenerating a structural/functional pulmonary tissue.

18. The pharmaceutical composition of claim 17, wherein said structural/functional pulmonary tissue comprises generation of a chimeric lung.

19. The pharmaceutical composition of claim 18, wherein said chimeric lung comprises formation of alveolar, bronchial and/or bronchiolar structures, and/or vascular structures.

20. The pharmaceutical composition of claim 17, wherein said structural/functional pulmonary tissue comprises an ability to synthesize surfactant and/or an ability to transport ions.

21. The pharmaceutical composition of claim 5, wherein said cells are capable of regenerating an epithelial, mesenchymal and/or endothelial tissue.

22. The pharmaceutical composition of claim 21, wherein said cells are CFTR expressing epithelial cells.

23. The pharmaceutical composition of any one of claims 1-22 for use in treating a pulmonary disorder or injury in a subject in need thereof.

24. The pharmaceutical composition of claim 23, wherein said composition is formulated for intravenous administration.

25. The pharmaceutical composition of claim 23, wherein said composition is formulated for administration via a route selected from the group consisting of intratracheal, intrabronchial, intraalveolar, intravenous, intraperitoneal, intranasal, subcutaneous, intramedullary, intrathecal, intraventricular, intracardiac, intramuscular, intraserosal, intramucosal, transmucosal, transnasal, rectal and intestinal.

26. The pharmaceutical composition of claim 23, further comprising a sublethal, lethal or supralethal conditioning protocol.

27. The pharmaceutical composition of claim 26, wherein said sublethal, lethal or supralethal conditioning is selected from the group consisting of a total body irradiation

(TBI), a partial body irradiation, a myeloablative conditioning, a co-stimulatory blockade, a chemotherapeutic agent and/or an antibody immunotherapy.

28. The pharmaceutical composition of claim 26, wherein said conditioning comprises naphthalene treatment.

29. The pharmaceutical composition of claim 28, wherein said conditioning further comprises total body irradiation (TBI).

30. The pharmaceutical composition of claim 26, wherein said conditioning comprises total body irradiation (TBI).

31. The pharmaceutical composition of claim 29 or 30, wherein said TBI comprises a single or fractionated irradiation dose within the range of 1-7.5 Gy.

32. The pharmaceutical composition of claim 23, wherein said subject is a human subject.

33. The pharmaceutical composition of claim 23, wherein said mammalian fetal pulmonary tissue is a human tissue.

34. The pharmaceutical composition of claim 23, wherein said isolated population of cell suspension is non-syngeneic with the subject.

35. The pharmaceutical composition of claim 34, wherein said isolated population of cell suspension is allogeneic with the subject.

36. The pharmaceutical composition of claim 35, wherein said allogeneic cells are selected from the group consisting of HLA identical, partially HLA identical and HLA non-identical with the subject.

37. The pharmaceutical composition of claim 34, wherein said isolated population of cell suspension is xenogeneic with the subject.

38. The pharmaceutical composition of claim 23, wherein said pulmonary disorder or injury is selected from the group consisting of cystic fibrosis, emphysema, asbestosis, chronic obstructive pulmonary disease (COPD), pulmonary fibrosis, idiopatic pulmonary fibrosis, pulmonary hypertension, lung cancer, sarcoidosis, acute lung injury (adult respiratory distress syndrome), respiratory distress syndrome of prematurity, chronic lung disease of prematurity (bronchopulmonarydysplasia), surfactant protein B deficiency, congenital diaphragmatic hernia, pulmonary alveolar proteinosis, pulmonary hypoplasia and lung injury.

~~39. A cell bank comprising a plurality of cell populations isolated from mammalian fetal pulmonary tissues, wherein said fetal pulmonary tissues are at a developmental stage essentially corresponding to that of a human pulmonary organ/tissue at a gestational stage selected from a range of 20 to 22 weeks of gestation, and wherein said plurality of cell populations have been HLA typed to form an allogeneic cell bank, each individually disposed within separate containers.~~

~~40. The cell bank of claim 39, further comprising a catalogue which comprises information about said HLA typed cells of said plurality of cell populations.~~

WHAT IS CLAIMED IS:

1. A pharmaceutical composition comprising as an active ingredient an isolated population of cell suspension from a mammalian fetal pulmonary tissue, wherein said fetal pulmonary tissue is at a developmental stage corresponding to that of a human pulmonary organ/tissue at a gestational stage selected from a range of 20 to 22 weeks of gestation.

2. The pharmaceutical composition of claim 1, wherein said gestational stage is 20 to 21 weeks of gestation.

3. The pharmaceutical composition of claim 1, wherein said gestational stage is 21 to 22 weeks of gestation.

4. The pharmaceutical composition of claim 1, wherein said mammalian fetal pulmonary tissue is a human tissue.

5. The pharmaceutical composition of claim 1, wherein said isolated population of cell suspension comprises a heterogeneous population of cells.

6. The pharmaceutical composition of claim 1, wherein said isolated population of cell suspension comprises progenitor cells.

7. The pharmaceutical composition of claim 6, wherein said progenitor cells are selected from the group consisting of epithelial progenitor cells, mesenchymal progenitor cells and endothelial progenitor cells.

8. The pharmaceutical composition of claim 5, wherein said cells comprise a cytokeratin 5+ (CK5+) marker expression.

9. The pharmaceutical composition of claim 5, wherein said cells comprise a cytokeratin 5+ (CK5+) and cytokeratin 14+ (CK14+) marker expression.

10. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD45- CD34- CD31- CD326- CD271- marker expression.

11. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD34+ CD31+ marker expression.

12. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD34+ CD326+ marker expression.

13. The pharmaceutical composition of claim 5, wherein said cells comprise a CD34+ CD31+ CD14+ CD45+ marker expression.

14. The pharmaceutical composition of claim 5, wherein said cells comprise a CD34+ CD31+ CD45- CD105+ marker expression.

15. The pharmaceutical composition of claim 5, wherein said cells comprise a nestin+ and/or a calcitonin gene related protein+ (CGRP+) marker expression.

16. The pharmaceutical composition of claim 5, wherein said cells comprise an alpha smooth muscle actin+ (alpha-SMA+) and/or a Vimentin+ marker expression.

17. The pharmaceutical composition of claim 5, wherein said cells are capable of regenerating a structural/functional pulmonary tissue.

18. The pharmaceutical composition of claim 17, wherein said structural/functional pulmonary tissue comprises generation of a chimeric lung.

19. The pharmaceutical composition of claim 18, wherein said chimeric lung comprises formation of alveolar, bronchial and/or bronchiolar structures, and/or vascular structures.

20. The pharmaceutical composition of claim 17, wherein said structural/functional pulmonary tissue comprises an ability to synthesize surfactant and/or an ability to transport ions.

21. The pharmaceutical composition of claim 5, wherein said cells are capable of regenerating an epithelial, mesenchymal and/or endothelial tissue.

22. The pharmaceutical composition of claim 21, wherein said cells are CFTR expressing epithelial cells.

23. The pharmaceutical composition of any one of claims 1-22 for use in treating a pulmonary disorder or injury in a subject in need thereof.

24. The pharmaceutical composition of claim 23, wherein said composition is formulated for intravenous administration.

25. The pharmaceutical composition of claim 23, wherein said composition is formulated for administration via a route selected from the group consisting of intratracheal, intrabronchial, intraalveolar, intravenous, intraperitoneal, intranasal, subcutaneous, intramedullary, intrathecal, intraventricular, intracardiac, intramuscular, intraserosal, intramucosal, transmucosal, transnasal, rectal and intestinal.

26. The pharmaceutical composition of claim 23, further comprising a sublethal, lethal or supralethal conditioning protocol.

27. The pharmaceutical composition of claim 26, wherein said sublethal, lethal or supralethal conditioning is selected from the group consisting of a total body irradiation (TBI), a partial body irradiation, a myeloablative conditioning, a co-stimulatory blockade, a chemotherapeutic agent and/or an antibody immunotherapy.

28. The pharmaceutical composition of claim 26, wherein said conditioning comprises naphthalene treatment.

29. The pharmaceutical composition of claim 28, wherein said conditioning further comprises total body irradiation (TBI).

30. The pharmaceutical composition of claim 26, wherein said conditioning comprises total body irradiation (TBI).

31. The pharmaceutical composition of claim 29 or 30, wherein said TBI comprises a single or fractionated irradiation dose within the range of 1-7.5 Gy.

32. The pharmaceutical composition of claim 23, wherein said subject is a human subject.

33. The pharmaceutical composition of claim 23, wherein said mammalian fetal pulmonary tissue is a human tissue.

34. The pharmaceutical composition of claim 23, wherein said isolated population of cell suspension is non-syngeneic with the subject.

35. The pharmaceutical composition of claim 34, wherein said isolated population of cell suspension is allogeneic with the subject.

36. The pharmaceutical composition of claim 35, wherein said allogeneic cells are selected from the group consisting of HLA identical, partially HLA identical and HLA non-identical with the subject.

37. The pharmaceutical composition of claim 34, wherein said isolated population of cell suspension is xenogeneic with the subject.

38. The pharmaceutical composition of claim 23, wherein said pulmonary disorder or injury is selected from the group consisting of cystic fibrosis, emphysema, asbestosis, chronic obstructive pulmonary disease (COPD), pulmonary fibrosis, idiopatic pulmonary fibrosis, pulmonary hypertension, lung cancer, sarcoidosis, acute lung injury (adult respiratory distress syndrome), respiratory distress syndrome of prematurity, chronic lung disease of prematurity (bronchopulmonarydysplasia), surfactant protein B deficiency, congenital diaphragmatic hernia, pulmonary alveolar proteinosis, pulmonary hypoplasia and lung injury.

39. A cell bank comprising a plurality of cell populations isolated from mammalian fetal pulmonary tissues, wherein said fetal pulmonary tissues are at a developmental stage essentially corresponding to that of a human pulmonary organ/tissue at a gestational stage selected from a range of 20 to 22 weeks of gestation, and wherein said plurality of cell populations have been HLA typed to form an allogeneic cell bank, each individually disposed within separate containers.

40. The cell bank of claim 39, further comprising a catalogue which comprises information about said HLA typed cells of said plurality of cell populations.

WHAT IS CLAIMED IS:

1. A pharmaceutical composition comprising as an active ingredient an isolated population of cell suspension from a mammalian fetal pulmonary tissue, wherein said fetal pulmonary tissue comprises viable cells and is at a developmental stage corresponding to that of a human pulmonary organ/tissue at a gestational stage selected from a range of 20 to 22 weeks of gestation.

2. The pharmaceutical composition of claim 1, wherein said gestational stage is 20 to 21 weeks of gestation.

3. The pharmaceutical composition of claim 1, wherein said gestational stage is 21 to 22 weeks of gestation.

4. The pharmaceutical composition of claim 1, wherein said mammalian fetal pulmonary tissue is a human tissue.

5. The pharmaceutical composition of claim 1, wherein said isolated population of cell suspension comprises a heterogeneous population of cells.

6. The pharmaceutical composition of claim 1, wherein said isolated population of cell suspension comprises progenitor cells.

7. The pharmaceutical composition of claim 6, wherein said progenitor cells are selected from the group consisting of epithelial progenitor cells, mesenchymal progenitor cells and endothelial progenitor cells.

8. The pharmaceutical composition of claim 5, wherein said cells comprise a cytokeratin 5+ (CK5+) marker expression.

9. The pharmaceutical composition of claim 5, wherein said cells comprise a cytokeratin 5+ (CK5+) and cytokeratin 14+ (CK14+) marker expression.

10. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD45- CD34- CD31- CD326- CD271- marker expression.

11. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD34+ CD31+ marker expression.

12. The pharmaceutical composition of claim 5, wherein said cells comprise a c-Kit+ CD34+ CD326+ marker expression.

13. The pharmaceutical composition of claim 5, wherein said cells comprise a CD34+ CD31+ CD14+ CD45+ marker expression.

14. The pharmaceutical composition of claim 5, wherein said cells comprise a CD34+ CD31+ CD45- CD105+ marker expression.

15. The pharmaceutical composition of claim 5, wherein said cells comprise a nestin+ and/or a calcitonin gene related protein+ (CGRP+) marker expression.

16. The pharmaceutical composition of claim 5, wherein said cells comprise an alpha smooth muscle actin+ (alpha-SMA+) and/or a Vimentin+ marker expression.

17. The pharmaceutical composition of claim 5, wherein said cells are capable of regenerating a structural/functional pulmonary tissue.

18. The pharmaceutical composition of claim 17, wherein said structural/functional pulmonary tissue comprises generation of a chimeric lung.

19. The pharmaceutical composition of claim 18, wherein said chimeric lung comprises formation of alveolar, bronchial and/or bronchiolar structures, and/or vascular structures.

20. The pharmaceutical composition of claim 17, wherein said structural/functional pulmonary tissue comprises an ability to synthesize surfactant and/or an ability to transport ions.

21. The pharmaceutical composition of claim 5, wherein said cells are capable of regenerating an epithelial, mesenchymal and/or endothelial tissue.

22. The pharmaceutical composition of claim 21, wherein said cells are CFTR expressing epithelial cells.

23. The pharmaceutical composition of any one of claims 1-22 for use in treating a pulmonary disorder or injury in a subject in need thereof.

24. The pharmaceutical composition of claim 23, wherein said composition is formulated for intravenous administration.

25. The pharmaceutical composition of claim 23, wherein said composition is formulated for administration via a route selected from the group consisting of intratracheal, intrabronchial, intraalveolar, intravenous, intraperitoneal, intranasal, subcutaneous, intramedullary, intrathecal, intraventricular, intracardiac, intramuscular, intraserosal, intramucosal, transmucosal, transnasal, rectal and intestinal.

26. The pharmaceutical composition of claim 23, further comprising a sublethal, lethal or supralethal conditioning protocol.

27. The pharmaceutical composition of claim 26, wherein said sublethal, lethal or supralethal conditioning is selected from the group consisting of a total body irradiation

(TBI), a partial body irradiation, a myeloablative conditioning, a co-stimulatory blockade, a chemotherapeutic agent and/or an antibody immunotherapy.

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30. The pharmaceutical composition of claim 26, wherein said conditioning comprises total body irradiation (TBI).

31. The pharmaceutical composition of claim 29 or 30, wherein said TBI comprises a single or fractionated irradiation dose within the range of 1-7.5 Gy.

32. The pharmaceutical composition of claim 23, wherein said subject is a human subject.

33. The pharmaceutical composition of claim 23, wherein said mammalian fetal pulmonary tissue is a human tissue.

34. The pharmaceutical composition of claim 23, wherein said isolated population of cell suspension is non-syngeneic with the subject.

35. The pharmaceutical composition of claim 34, wherein said isolated population of cell suspension is allogeneic with the subject.

36. The pharmaceutical composition of claim 35, wherein said allogeneic cells are selected from the group consisting of HLA identical, partially HLA identical and HLA non-identical with the subject.

37. The pharmaceutical composition of claim 34, wherein said isolated population of cell suspension is xenogeneic with the subject.

38. The pharmaceutical composition of claim 23, wherein said pulmonary disorder or injury is selected from the group consisting of cystic fibrosis, emphysema, asbestosis, chronic obstructive pulmonary disease (COPD), pulmonary fibrosis, idiopatic pulmonary fibrosis, pulmonary hypertension, lung cancer, sarcoidosis, acute lung injury (adult respiratory distress syndrome), respiratory distress syndrome of prematurity, chronic lung disease of prematurity (bronchopulmonarydysplasia), surfactant protein B deficiency, congenital diaphragmatic hernia, pulmonary alveolar proteinosis, pulmonary hypoplasia and lung injury.