CLAIMS

That which is claimed is:

1. Use of at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof and at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, in the manufacture of a medicament for ~~A method of~~ preventing or reducing the symptoms of primary graft dysfunction (PGD) in a recipient of a lung transplant;~~, comprising administering to the recipient a therapeutically effective amount of~~ wherein the at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, and ~~a therapeutically effective amount of~~ the at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof are to be administered to the recipient.~~, thereby preventing or reducing the symptoms of PGD in the recipient~~.

2. The use~~method~~ of claim 1, wherein the recipient of the lung transplant is a human that is at risk of developing or is being treated for primary graft dysfunction (PGD).

3. The ~~method~~ use of claim 1, for preventing or reducing the symptoms of cold ischemia-associated PGD.

4. The ~~method~~ use of claim 1~~-~~, for preventing or reducing the symptoms of warm ischemia-associated PGD.

5. The ~~method~~ use of any of claims 1-4, wherein the symptoms are selected from the group consisting of inflammation, acute graft rejection, graft rejection, ischemia-reperfusion injury, reperfusion injury, impaired pulmonary function, bronchiolitis obliterans, impaired blood oxygenation, increased inflammatory cytokine production, intra-graft and intra-airway accumulation of granulocytes, pulmonary edema and hypoxemia.

6. The ~~method~~ use of any of claims 1-4, wherein the administration of the at least oneTLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, and the at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof results in reduced pulmonary edema in the recipient.

7. The ~~method~~use of any of claims 1-4, wherein the administration of the at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, and the at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof results in increased blood oxygenation in the recipient.

8. The use~~method~~ of any of claims 1-4, wherein the administration of the at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, and the least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof results in preserved blood oxygenation in the recipient.

9. The use~~method~~ of any of claims 1-4, wherein the administration of the at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, and the at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof results in improved pulmonary function in the recipient.

10. The use~~method~~ of any of claims 1-4, wherein the administration of the at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, and the at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof results in preserving pulmonary function in the recipient.

11. The use~~method~~ of any of claims 1-4, wherein the administration of the at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, and the at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof results in improved pulmonary function of the transplanted lung.

12. The use~~method~~ of claim 1, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be administered to the recipient of a lung transplant prior to, during or following lung transplantation.

13. The use~~method~~ of claim 12, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be administered to the recipient of a lung transplant prior to lung transplantation.

14. The use~~method~~ of claim 12, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be administered to the recipient of a lung transplant during lung transplantation.

15. The use~~method~~ of claim 12, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be administered to the recipient of a lung transplant following lung transplantation.

16. The use~~method~~ of claim 1, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be co-administered to the recipient in the same formulation.

17. The use~~method~~ of claim 1, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be co-administered to the recipient in different formulations.

18. The use~~method~~ of claim 1, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be co-administered to the recipient by the same route.

19. The use~~method~~ of claim 1, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be co-administered to the recipient by different routes.

20. The use~~method~~ of claim 1, wherein the ~~administering~~administration to the recipient is simultaneous.

21. The use~~method~~ of claim 1, wherein the ~~administering~~ administration to the recipient is sequential.

22. The use~~method~~ of any of claims 1-21, ~~further comprising~~wherein the recipient is to be administered with at least one additional treatment selected from the group consisting of surgery, steroid therapy, non-steroid therapy, antiviral therapy, antifungal therapy, antimicrobial therapy, immunosuppressant therapy, anti-infective therapy, anti-hypertensive therapy, nutritional supplements and any combination thereof.

23. The use~~method~~ of claim 22, wherein the additional treatment is to be administered prior to, subsequent to or concomitantly with the administration~~administering~~ of at least one TLR2 inhibitor and at least one TLR4 inhibitor.

24. The use~~method~~ of claim 22 wherein the additional treatment comprises immunosuppressant therapy.

25. The use~~method~~ of claim 1, wherein the ~~administering~~ administration to the recipient comprises systemic administration or local administration.

26. The use~~method~~ of claim 25, wherein the ~~administering~~ administration to the recipient comprises systemic administration.

27. The use~~method~~ of claim 25, wherein the ~~administering~~ administration to the recipient comprises local administration.

28. The use~~method~~ of claim 25, wherein the ~~administering~~ administration to the recipient comprises a method selected from intravenous, intraarterial, intraperitoneal, intramuscular, intraportal, subcutaneous, direct injection, ~~,~~ intratracheal instillation, inhalation, intranasal, pulmonary and administration via pump into the lung.

29. The use~~method~~ of claim 28, wherein the ~~administering~~ administration to the recipient comprises inhalation.

30. The use~~method~~ of claim 28, wherein the ~~administering~~ administration to the recipient comprises intratracheal instillation.

31. The use~~method~~ of any of claims 1-30, wherein each inhibitor is independently selected from the group consisting of a small organic molecule, a protein, an antibody or fragment thereof, a peptide, a peptidomimetic and a nucleic acid molecule.

32. The use~~method~~ of claim 31, wherein at least one inhibitor comprises a nucleic acid molecule.

33. The use~~method~~ of claim 32, wherein each inhibitor comprises a nucleic acid molecule.

34. The use~~method~~ of claim 33, wherein a first nucleic acid molecule is a double- stranded oligonucleotide that binds a nucleotide sequence encoding a TLR2 gene and a second nucleic acid molecule is a double-stranded oligonucleotide that binds a nucleotide sequence encoding a TLR4 gene.

~~second nucleic acid molecule is a double-stranded oligonucleotide that binds a nucleotide sequence encoding a TLR4 gene.~~

35. The use~~method~~ of claim 34, wherein the double-stranded oligonucleotides are linked one to the other in tandem or annealed in RNAistar formation.

36. The use~~method~~ of claim 34, wherein the first double-stranded oligonucleotide comprises:

(a) a sense strand and an antisense strand;

(b) each strand is independently 17 to 40 nucleotides in length;

(c) a 17 to 40 nucleotide sequence of the antisense strand is complementary to a sequence of an mRNA encoding TLR2; and

(d) a 17 to 40 nucleotide sequence of the sense strand is complementary to the antisense strand; and

wherein the second double-stranded oligonucleotide comprises:

(a) a sense strand and an antisense strand;

(b) each strand is independently 17 to 40 nucleotides in length;

(c) a 17 to 40 nucleotide sequence of the antisense strand is complementary to a sequence of an mRNA encoding TLR4; and

(d) a 17 to 40 nucleotide sequence of the sense strand is complementary to the antisense strand.

37. The use~~method~~ of claim 36, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are to be co-administered to the recipient in the same formulation.

38. The use~~method~~ of claim 36, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are to be co-administered to the recipient in different formulations.

39. The use~~method~~ of claim 36, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are to be co-administered to the recipient by the same route.

40. The use~~method~~ of claim 36, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are to be co-administered to the recipient by different routes.

41. The use~~method~~ of claim 36, wherein the ~~administering~~ administration to the recipient is simultaneous.

42. The use~~method~~ of claim 36, wherein the ~~administering~~ administration to the recipient is sequential.

43. The use~~method~~ of claim 36, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are formulated for ~~administering~~ administration to the recipient once.

44. The use~~method~~ of claim 36, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are formulated for ~~administering~~ administration to the recipient at least once-a-day.

45. The use~~method~~ of claim 36, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are formulated for multiple administrations to the recipient.

46. The use~~method~~ of claim 34, wherein at least one double-stranded oligonucleotide independently comprises a structure (Al):

(Al) 5' (N)x - Z 3' (antisense strand)

3' Z'-(N')y -z" 5' (sense strand)

wherein each of N and N' is a ribonucleotide which may be unmodified or modified, or an unconventional moiety;

wherein each of (N)x and (N')y is an oligonucleotide in which each consecutive N or N' is joined to the next N or N' by a covalent bond;

wherein each of Z and Z' is independently present or absent, but if present is independently 1-5 consecutive nucleotides or unconventional moieties or a combination thereof covalently attached at the 3 ' terminus of the strand in which it is present;~~.~~

wherein z" may be present or absent, but if present is a capping moiety covalently attached at the 5' terminus of (N')y; wherein each of x and y is independently an integer between 17 and 40; wherein the sequence of (N')y is complementary to the sequence of (N)x; and wherein (N)x comprises an antisense sequence to an mRNA selected from an mRNA encoding TLR2 and an mRNA encoding TLR4.

47. The ~~method~~ of claim 34 or 46, wherein the mRNA polynucleotide sequence of TLR2 is set forth in SEQ ID NO: 1 and wherein the mRNA polynucleotide sequence of TLR4 is set forth in any one of SEQ ID NO:2, SEQ ID NO:3 and SEQ ID NO:4.

48. The ~~method~~ of claim 46, wherein (N)x comprises an antisense oligonucleotide selected from the group consisting of oligonucleotides having SEQ ID NOs: 723-1440, 2247-3052, 7076-8312 and 8459-8604 and wherein (N')y comprises a complementary sense strand oligonucleotide selected from the group consisting of oligonucleotides having SEQ ID NOs: 5 - 722, 1441 - 2246, 5839 - 7075 and 8313 - 8458.

49. The ~~method~~ of claim 34 or 46, wherein administration of the at least one double-stranded oligonucleotide that binds a nucleotide sequence encoding a TLR2 gene and the at least one double-stranded oligonucleotide that binds a nucleotide sequence encoding a TLR4 gene results in down-regulation of TLR2 expression and TLR4 expression, respectively.

50. The ~~method~~ of any of claims 46 to 48, wherein x = y =19.

51. The ~~method~~ of claim 34 wherein, at least one double-stranded compound independently comprises a structure (A2):

(A2) 5' Nl-(N)x - Z 3' (antisense strand)

3' Z'-N2-(N')y-z" 5' (sense strand)

wherein each of N2, N and N' is independently an unmodified or modified ribonucleotide, or an unconventional moiety;

wherein each of (N)x and (N')y is an oligonucleotide in which each consecutive N or N' is joined to the adjacent N or N' by a covalent bond;

wherein each of x and y is independently an integer between 17 and 39;

wherein the sequence of (N')y is complementary to the sequence of (N)x and wherein (N)x is complementary to a consecutive sequence in an mRNA selected from an mRNA encoding TLR2 and an mRNA encoding TLR4;

wherein Nl is covalently bound to (N)x and is mismatched to the mRNA selected from an mRNA encoding TLR2 and an mRNA encoding TLR4;

wherein Nl is a moiety selected from the group consisting of uridine, modified uridine, ribothymidine, modified ribothymidine, deoxyribothymidine, modified deoxyribothymidine, riboadenine, deoxyriboadenine and modified deoxyriboadenine, wherein z" may be present or absent, but if present is a capping moiety covalently attached at the 5' terminus of N2- (N')y; and

wherein each of Z and Z' is independently present or absent, but if present is independently 1-5 consecutive nucleotides or unconventional moieties or a combination thereof covalently attached at the 3' terminus of the strand in which it is present.

52. The use ~~method~~ of claim 51, wherein x =y= 18.

53. The use~~method~~ of claim 51 or 52, wherein the sequence of (N)x comprises an antisense strand oligonucleotide selected from the group consisting of oligonucleotides having SEQ ID NOs: 4153 - 5252, 5546 - 5838, 10319 - 12032, and 12085 - 12136.

54. The use~~method~~ of claim 53, wherein the sequence of (N')y comprises a sense strand oligonucleotide selected from the group consisting of oligonucleotides having SEQ ID NOs: 3053 - 4152, 5253 - 5545, 8605 - 10318, and 12033 - 12084.

55. Use of a of at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, and at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof in the manufacture of a medicament~~A method~~ for treating a lung disorder, disease or injury in a patient in need thereof; ~~comprising administering to the patient a therapeutically effective combination of~~wherein the at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof and the at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof are to be administered to the patient. ~~, thereby treating the lung disorder, disease or injury in the patient.~~

56. The use~~method~~ of claim 55, wherein the lung disorder, disease or injury is selected from acute respiratory distress syndrome (ARDS), acute lung injury, pulmonary fibrosis (idiopathic), bleomycin induced pulmonary fibrosis, mechanical ventilator induced

lung injury, chronic obstructive pulmonary disease (COPD), chronic bronchitis, a disorder associated with lung transplantation and emphysema.

57. The use~~method~~ of claim 56, wherein the lung disorder, disease or injury is a disorder associated with lung transplantation.

58. The use~~method~~ of claim 57, wherein the lung disorder associated with lung transplantation is selected from the group consisting of inflammation, graft rejection, primary graft failure, ischemia-reperfusion injury, reperfusion injury, reperfusion edema, allograft dysfunction, acute graft dysfunction, pulmonary reimplantation response, bronchiolitis obliterans and primary graft dysfunction (PGD).

59. The use~~method~~ of claim 58, wherein the lung disorder associated with lung transplantation is PGD.

60. The use~~method~~ of any of claims 55-59, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be co-administered to the recipient in the same formulation.

61. The use~~method~~ of any of claims 55-59, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be co-administered to the recipient in different formulations.

62. The use~~method~~ of any of claims 55-59, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be co-administered to the recipient by the same route.

63. The use~~method~~ of any of claims 55-59, wherein the at least one TLR2 inhibitor and the at least one TLR4 inhibitor are to be co-administered to the recipient by different routes.

64. The use~~method~~ of any of claims 55-59, wherein the ~~administering~~ administration to the recipient is simultaneous.

65. The use~~method~~ of any of claims 55-59, wherein the ~~administering~~ administration to the recipient is sequential.

66. The use~~method~~ of any of claims 55-65, ~~further comprising~~wherein the patient is to be administered with at least one additional treatment selected from the group consisting of surgery, steroid therapy, non-steroid therapy, antiviral therapy, antifungal therapy, antimicrobial therapy, immunosuppressant therapy, anti-infective therapy, anti-hypertensive therapy, nutritional supplements and any combination thereof.

67. The use~~method~~ of claim 66, wherein the additional treatment is to be administered prior to, subsequent to or concomitantly with the ~~administering~~ administration of at least one TLR2 inhibitor and at least one TLR4 inhibitor.

68. The use~~method~~ of claim 67, wherein the additional treatment comprises immunosuppressant therapy.

69. The use~~method~~ of any of claims 55-65, wherein the ~~administering~~ administration to the patient comprises systemic administration or local administration.

70. The use~~method~~ of claim 69, wherein the ~~administering~~ administration to the patient comprises systemic administration.

71. The use~~method~~ of claim 69, wherein the ~~administering~~ administration to the patient comprises local administration.

72. The use~~method~~ of claim 69,wherein the ~~administering~~ administration to the patient comprises a method selected from intravenous, intraarterial, intraperitoneal, intramuscular, intraportal, subcutaneous, direct injection, intratracheal instillation, inhalation, intranasal, pulmonary and administration via pump into the lung.

73. The use~~method~~ of claim72, wherein the ~~administering~~ administration to the patient comprises inhalation.

74. The use~~method~~ of claim72, wherein the ~~administering~~ administration to the patient comprises intratracheal instillation.

75. The use ~~method~~ of claim 55, wherein each inhibitor is independently selected from the group consisting of a small organic molecule, a protein, an antibody or fragment thereof, a peptide, a peptidomimetic and a nucleic acid molecule.

76. The use~~method~~ of claim 75, wherein at least one inhibitor comprises a nucleic acid molecule.

77. The use~~method~~ of claim 76, wherein each inhibitor comprises a nucleic acid molecule.

78. The use~~method~~ of claim 77, wherein a first nucleic acid molecule is a double- stranded oligonucleotide that binds a nucleotide sequence encoding a TLR2 gene and a second nucleic acid molecule is a double-stranded oligonucleotide that binds a nucleotide sequence encoding a TLR4 gene.

79. The use~~method~~ of claim 77, wherein the double-stranded oligonucleotides are linked one to the other in tandem or annealed in RNAistar formation.

80. The use~~method~~ of claim 78, wherein the first double-stranded oligonucleotide comprises:

(a) a sense strand and an antisense strand;

(b) each strand is independently 17 to 40 nucleotides in length;

(c) a 17 to 40 nucleotide sequence of the antisense strand is complementary to a sequence of an mRNA encoding TLR2; and

(d) a 17 to 40 nucleotide sequence of the sense strand is complementary to the antisense strand; and

wherein the second double-stranded oligonucleotide comprises:

(a) a sense strand and an antisense strand;

(b) each strand is independently 17 to 40 nucleotides in length;

(c) a 17 to 40 nucleotide sequence of the antisense strand is complementary to a sequence of an mRNA encoding TLR4; and

(d) a 17 to 40 nucleotide sequence of the sense strand is complementary to the antisense strand.

81. The use~~method~~ of claim 80, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are to be co-administered to the patient in the same formulation.

82. The use~~method~~ of claim 80, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are to be co-administered to the patient in different formulations.

83. The use~~method~~ of claim 80, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are to be co-administered to the patient by the same route.

84. The use~~method~~ of claim 80, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are to be co -administered to the patient by different routes.

85. The use~~method~~ of claim 80, wherein the ~~administering~~ administration to the patient is simultaneous.

86. The use~~method~~ of claim 80, wherein the ~~administering~~ administration to the patient is sequential.

87. The use~~method~~ of claim 80, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are formulated for ~~administering~~ administration to the patient once.

88. The use~~method~~ of claim 80, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are formulated for ~~administering~~ administration to the patient at least once-a-day.

89. The use~~method~~ of claim 80, wherein the first double-stranded oligonucleotide and the second double-stranded oligonucleotide are formulated for multiple administrations to the patient.

90. The use~~method~~ of claim 78, wherein at least one double-stranded oligonucleotide comprises a structure (Al):

(Al) 5' (N)x - Z 3' (antisense strand)

3' Z'-(N')y -z" 5' (sense strand)

wherein each of N and N' is a ribonucleotide which may be unmodified or modified, or an unconventional moiety;

wherein each of (N)x and (N')y is an oligonucleotide in which each consecutive N or N' is joined to the next N or N' by a covalent bond;

wherein each of Z and Z' is independently present or absent, but if present is independently 1-5 consecutive nucleotides or unconventional moieties or a combination thereof covalently attached at the 3 ' terminus of the strand in which it is present;

wherein z" may be present or absent, but if present is a capping moiety covalently attached at the 5' terminus of (N')y; wherein each of x and y is independently an integer between 17 and 40; wherein the sequence of (N')y is complementary to the sequence of (N)x; and wherein (N)x comprises an antisense sequence to an mRNA selected from an mRNA encoding TLR2 and an mRNA encoding TLR4.

91. The use~~method~~ of claim 78 or 90, wherein the mRNA polynucleotide sequence of TLR2 is set forth in SEQ ID NO: 1 and wherein the mRNA polynucleotide sequence of TLR4 is set forth in any one of SEQ ID NO:2, SEQ ID NO:3 and SEQ ID NO:4.

92. The use~~method~~ of claim 90, wherein (N)x comprises an antisense oligonucleotide selected from the group consisting of oligonucleotides having SEQ ID NOs: 723-1440, 2247-3052, 7076-8312 and 8459-8604 and wherein (N')y comprises a sense strand oligonucleotide selected from the group consisting of oligonucleotides having SEQ ID NOs: 5 - 722, 1441 - 2246, 5839 - 7075 and 8313 - 8458.

93. The use~~method~~ of any of claims 90 to 92, wherein x = y =19.

94. The use~~method~~ of claim 78 wherein, at least one double-stranded compound comprises a structure (A2):

(A2) 5' Nl-(N)x - Z 3' (antisense strand)

3' Z'-N2-(')y-z" 5 ' (sense strand)

wherein each of N2, N and N' is independently an unmodified or modified ribonucleotide, or an unconventional moiety;

wherein each of (N)x and (N')y is an oligonucleotide in which each consecutive N or N' is joined to the adjacent N or N' by a covalent bond;

wherein each of x and y is independently an integer between 17 and 39;

wherein the sequence of (N')y is complementary to the sequence of (N)x and wherein (N)x is complementary to a consecutive sequence in an mR A selected from an mR A encoding TLR2 and an mRNA encoding TLR4;

wherein Nl is covalently bound to (N)x and is mismatched to the mRNA selected from an mRNA encoding TLR2 and an mRNA encoding TLR4;

wherein Nl is a moiety selected from the group consisting of uridine, modified uridine, ribothymidine, modified ribothymidine, deoxyribothymidine, modified deoxyribothymidine, riboadenine, deoxyriboadenine and modified deoxyriboadenine, wherein z" may be present or absent, but if present is a capping moiety covalently attached at the 5' terminus of N2- (N')y; and

wherein each of Z and Z' is independently present or absent, but if present is independently 1-5 consecutive nucleotides or unconventional moieties or a combination thereof covalently attached at the 3 ' terminus of the strand in which it is present.

95. The use~~method~~ of claim 94, wherein x =y=l 8.

96. The use~~method~~ of claim 94 or 95, wherein the sequence of (N)x comprises an antisense oligonucleotide selected from the group consisting of oligonucleotides having SEQ ID NOs: 4153 - 5252, 5546 - 5838, 10319 - 12032, and 12085 - 12136 and wherein the sequence of (N')y comprises a sense oligonucleotide selected from the group consisting of oligonucleotides having SEQ ID NOs: 3053 - 4152, 5253 - 5545, 8605 - 10318, and 12033 - 12084.

97. A composition comprising at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof and at least one TLR4 inhibitor or a pharmaceutically acceptable salt or prodrug thereof; and a pharmaceutically acceptable carrier.

98. The composition of claim 97, wherein each inhibitor is independently selected from the group consisting of a small organic molecule; a protein, an antibody or fragments thereof, a peptide, a peptidomimetic and a nucleic acid molecule.

(c) a 17 to 40 nucleotide sequence of the antisense strand is complementary to a sequence of an mRNA encoding TLR2; and

(d) a 17 to 40 nucleotide sequence of the sense strand is complementary to the antisense strand and;

wherein the TLR4 inhibitor is a double-stranded oligonucleotide comprising:

(a) a sense strand and an antisense strand;

(b) each strand is independently 17 to 40 nucleotides in length;

(c) a 17 to 40 nucleotide sequence of the antisense strand is complementary to a sequence of an mRNA encoding TLR4; and

(d) a 17 to 40 nucleotide sequence of the sense strand is complementary to the antisense strand.

127. The package of claim 124, wherein the dosage units are to be co-administered to a patient by the same route.

128. The package of claim 124, wherein the dosage units are to be co-administeredration to a patient by different routes.

129. The package of claim 124, wherein the dosage units are to be administered to a patient simultaneously or sequentially.

130. The package of claim 132, wherein dosage units are for administrationering to a patient at least once-a-day.

131. The package of claim 124, wherein the dosage units are for multiple administrations to a patient.

132. The package of claim 124, wherein at least one double-stranded oligonucleotide independently comprises a structure (Al):

(Al) 5' (N)x - Z 3' (antisense strand)

3' Z'-(')y -z" 5' (sense strand)

wherein each of N and N' is a ribonucleotide which may be unmodified or modified, or an unconventional moiety;

134. The kit or package of any one of claims to 108-124, wherein the instructions or package insert indicates that the therapeutic agents or dosage units are suitable for use in treating a patient suffering from a lung disease, injury or disorder selected from the group consisting of acute respiratory distress syndrome (ARDS), acute lung injury, pulmonary fibrosis (idiopathic), bleomycin induced pulmonary fibrosis, mechanical ventilation induced lung injury, chronic obstructive pulmonary disease (COPD), chronic bronchitis, a disorder associated with lung transplantation and emphysema.

135. The kit or package of claim 134, wherein the instructions or package insert indicate that the therapeutic agents or dosage units are suitable for use in treating a patient suffering from a disorder associated with lung transplantation.

136. The kit or package of claim 135, wherein lung disorder associated with lung transplantation is selected from the group consisting of inflammation, graft rejection, primary graft failure, ischemia-reperfusion injury, reperfusion injury, reperfusion edema, allograft dysfunction, acute graft dysfunction, pulmonary reimplantation response, bronchiolitis obliterans and primary graft dysfunction (PGD).

137. Use of at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof in the manufacture of a medicament for~~A method of~~ preventing or reducing the symptoms of primary graft dysfunction (PGD) in a recipient of a lung transplant; wherein~~, comprising administering to~~ the recipient is to be administered a therapeutically-effective amount of at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof.~~, thereby preventing or reducing the symptoms of PGD in the recipient.~~

138. The ~~method~~ use of claim 137, wherein the recipient of a lung transplant is a human that is being treated for primary graft dysfunction (PGD).

139. The use~~method~~ of claim 138, for preventing or reducing the symptoms of cold ischemia-associated PGD or warm ischemia-associated PGD.

140. The use~~method~~ of any of claims 137-139, wherein the symptoms are selected from the group consisting of inflammation, acute graft rejection, graft rejection, ischemia- reperfusion injury, reperfusion injury, impaired pulmonary function, bronchiolitis obliterans,

impaired blood oxygenation, increased inflammatory cytokine production, intra-graft and intra-airway accumulation of granulocytes, pulmonary edema and hypoxemia.

141. The use ~~method~~ of claim 137-139, wherein the administration of a therapeutically-effective amount of at least one TLR2 inhibitor or a pharmaceutically acceptable salt or prodrug thereof, results in one of reduced pulmonary edema in the recipient; increased blood oxygenation in the recipient, preserved blood oxygenation in the recipient, improved pulmonary function in the recipient, preserving pulmonary function in the recipient, improved pulmonary function of the transplanted lung.

142. The use~~method~~ of claim 141, wherein the at least one TLR2 inhibitor is to be administered to the recipient of a lung transplant prior to, during or following lung transplantation.

143. The use~~method~~ of any of claims 137-142, wherein the recipient is to be further administered with ~~further comprising~~ at least one additional treatment selected from the group consisting of surgery, steroid therapy, nonsteroid therapy, antiviral therapy, antifungal therapy, antimicrobial therapy, immunosuppressant therapy, anti-infective therapy, anti-hypertensive therapy, nutritional supplements and any combination thereof.

144. The use~~method~~ of claim 143, wherein the additional treatment is to be administered prior to, subsequent to or concomitantly with the administration~~ering~~ of at least one TLR2 inhibitor.

145. The use~~method~~ of claim 143, wherein the additional treatment comprises immunosuppressant therapy.

146. The use~~method~~ of claim 143, wherein the administration~~ering~~ to the recipient comprises systemic administration or local administration.

147. The use~~method~~ of claim 146, wherein the administration~~ering~~ to the recipient comprises a method selected from intravenous, intraarterial, intraperitoneal, intramuscular, intraportal, subcutaneous, direct injection~~,~~ intratracheal instillation, inhalation, intranasal, pulmonary and administration via pump into the lung.

148. The use~~method~~ of claim 147, wherein the administration~~ering~~ to the recipient comprises inhalation or intratracheal instillation.

149. The use ~~method~~ of claim 137, wherein the inhibitor comprises a nucleic acid molecule.

150. The use ~~method~~ of claim 149, wherein the double-stranded oligonucleotide comprises:

(a) a sense strand and an antisense strand;

(b) each strand is independently 17 to 40 nucleotides in length;

(c) a 17 to 40 nucleotide sequence of the antisense strand is complementary to a sequence of an mRNA encoding TLR2; and

(d) a 17 to 40 nucleotide sequence of the sense strand is complementary to the antisense strand.

151. The use~~method~~ of claim 150, wherein the double-stranded oligonucleotide is formulated for administration~~ering~~ to the patient once, at least once-a-day or for multiple administrations to the recipient.

152. The use~~method~~ of claim 151, wherein the double-stranded oligonucleotide comprises a structure (Al):

(Al) 5' (N)x - Z 3' (antisense strand)

3' Z'-(N')y -z" 5' (sense strand)

wherein each of N and N' is a ribonucleotide which may be unmodified or modified, or an unconventional moiety;

wherein each of (N)x and (N')y is an oligonucleotide in which each consecutive N or N' is joined to the next N or N' by a covalent bond;

wherein each of Z and Z' is independently present or absent, but if present is independently 1-5 consecutive nucleotides or unconventional moieties or a combination thereof covalently attached at the 3 ' terminus of the strand in which it is present.

wherein z" may be present or absent, but if present is a capping moiety covalently attached at the 5' terminus of (N')y; wherein each of x and y is independently an integer between 17 and 40;

wherein the sequence of (N')y is complementary to the sequence of (N)x; and wherein (N)x comprises an antisense sequence to an mRNA encoding TLR2 having a sequence forth in SEQ ID NO: 1 .

153. The usemethod of claim 152, wherein (N)x comprises an antisense oligonucleotide present in SEQ ID NOs: 723-1440 and 2247-3052 and wherein (N')y comprises a sense strand oligonucleotide present in SEQ ID NOs: 5 - 722 and 1441 - 2246.

154. The usemethod of any one of claim 152-153, wherein x = y =19.

155. The usemethod of claim 151 wherein, the double-stranded compound comprises a structure (A2):

(A2) 5' Nl-(N)x - Z 3' (antisense strand)

3' Z'-N2-(N')y-z" 5' (sense strand)

wherein each of N2, N and N' is independently an unmodified or modified ribonucleotide, or an unconventional moiety;

wherein each of (N)x and (N')y is an oligonucleotide in which each consecutive N or N' is joined to the adjacent N or N' by a covalent bond;

wherein each of x and y is independently an integer between 17 and 39;

wherein the sequence of (N')y is complementary to the sequence of (N)x and wherein (N)x is complementary to a consecutive sequence in an mRNA encoding TLR2; wherein Nl is covalently bound to (N)x and is mismatched to the mRNA encoding TLR2;

wherein Nl is a moiety selected from the group consisting of uridine, modified uridine, ribothymidine, modified ribothymidine, deoxyribothymidine, modified deoxyribothymidine, riboadenine, deoxyriboadenine and modified deoxyriboadenine, wherein z" may be present or absent, but if present is a capping moiety covalently attached at the 5' terminus of N2- (N')y; and wherein each of Z and Z' is independently present or absent, but if present is independently 1-5 consecutive nucleotides or unconventional moieties or a combination thereof covalently attached at the 3' terminus of the strand in which it is present.

156. The usemethod of claim 155, wherein x=y=18.

157. The use~~method~~ of claim 155, wherein the sequence of (N)x is selected from any one of SEQ ID NOs: 4153 - 5252 and 5546 - 5838 and wherein the sequence of (N')y is selected from any one of SEQ ID NOs: 3053 - 4152 and 5253 - 5545.

158. The use~~method~~ of claim 155, wherein administration of the at least one double- stranded oligonucleotide that binds a nucleotide sequence encoding a TLR2 gene results in down-regulation of TLR2 expression.

159. A kit or package comprising at least one dosage unit comprising a TLR2 inhibitor; optionally with instructions for use, wherein the instructions indicate that the dosage unit is suitable for use in treating a patient suffering from a lung disease, injury or disorder selected from the group consisting of respiratory distress syndrome (ARDS), acute lung injury, pulmonary fibrosis (idiopathic), bleomycin induced pulmonary fibrosis, mechanical ventilator induced lung injury, chronic obstructive pulmonary disease (COPD), chronic bronchitis, a disorder associated with lung transplantation and emphysema.

160. The kit or package of claim 159, wherein the TLR2 inhibitor comprises a nucleic acid molecule.

161. The kit or package of claim 160, wherein the nucleic acid molecule is a double-stranded oligonucleotide that binds a nucleotide sequence encoding a TLR2 gene.

162. The kit or package of claim 161, wherein the double-stranded oligonucleotide comprises:

(a) a sense strand and an antisense strand;

(b) each strand is independently 17 to 40 nucleotides in length;

(c) a 17 to 40 nucleotide sequence of the antisense strand is complementary to a sequence of an mRNA encoding TLR2; and

(d) a 17 to 40 nucleotide sequence of the sense strand is complementary to the antisense strand.

163. The kit or package of claim 162, wherein the double-stranded oligonucleotide is formulated for administration~~ering~~ to the patient once, at least once-a-day or for multiple administrations to the patient.

164. The kit or package of claim 162, wherein the double-stranded oligonucleotide comprises a structure (Al) or (A2), as disclosed in the specification.

165. A composition of any one of claims 97-107 for use in therapy.

166. A composition of claim 165 wherein the therapy comprises treating or preventing or reducing the symptoms of primary graft dysfunction (PGD) in a recipient of a lung transplant, for preventing or reducing the symptoms of cold ischemia-associated PGD, for preventing or reducing the symptoms of warm ischemia-associated PGD.

167. A composition of claim 166, wherein the symptoms are selected from the group consisting of inflammation, acute graft rejection, graft rejection, ischemia-reperfusion injury, reperfusion injury, impaired pulmonary function, bronchiolitis obliterans, impaired blood oxygenation, increased inflammatory cytokine production, intra-graft and intra-airway accumulation of granulocytes, pulmonary edema and hypoxemia.

168. Use of a composition of any one of claims 97-107 for the preparation of a medicament for treating or preventing a lung disease, disorder or injury selected from acute respiratory distress syndrome (ARDS), acute lung injury, pulmonary fibrosis (idiopathic), bleomycin induced pulmonary fibrosis, mechanical ventilator induced lung injury, chronic obstructive pulmonary disease (COPD), chronic bronchitis, and emphysema.

~~169. Use of a composition of any one of claims 97-107 for treating or preventing a lung disease, disorder or injury selected from acute respiratory distress syndrome (ARDS), acute lung injury, pulmonary fibrosis (idiopathic), bleomycin induced pulmonary fibrosis, mechanical ventilator induced lung injury, chronic obstructive pulmonary disease (COPD), chronic bronchitis, and emphysema.~~

~~170.~~169. Use of a composition of any one of claims 97-107 in the manufacture of a medicament (i) for treating or preventing or reducing the symptoms of primary graft dysfunction (PGD) in a recipient of a lung transplant; (ii) for preventing or reducing the symptoms of cold ischemia-associated PGD; or (iii) for preventing or reducing the symptoms of warm ischemia-associated PGD.

170. The use of claim 169, wherein the symptoms are selected from the group consisting of inflammation, acute graft rejection, graft rejection, ischemia-reperfusion injury, reperfusion

injury, impaired pulmonary function, bronchiolitis obliterans, impaired blood oxygenation, increased inflammatory cytokine production, intra-graft and intra-airway accumulation of granulocytes, pulmonary edema and hypoxemia.