

WHAT IS CLAIMED IS:

1. A method for inhibiting microglial phagocytosis of a population of neural cells administered in a patient comprising administering to the patient a therapeutically effective amount of a population of neural cells comprising an exogenous CD47 polypeptide and reduced expression of MHC class I and/or MHC class II human leukocyte antigens.
2. The method of claim 1, wherein the population of neural cells comprises reduced expression of MHC class I or MHC class II human leukocyte antigens.
3. The method of claim 1, wherein the population of neural cells comprises reduced expression of MHC class I and MHC class II human leukocyte antigens.
4. The method of any one of claims 1-3, wherein the administering comprises grafting the population of neural cells into the patient's central or peripheral nervous system.
5. The method of claim 4, wherein the grafting comprises injecting the population of neural cells into the patient.
6. The method of claim 4 or 5, wherein the grafting comprises disrupting the patient's blood-brain barrier.
7. The method of any one of claims 1-6, wherein the population of neural cells exhibits long-term survival after the disruption of the patient's blood-brain barrier.
8. The method of any one of claims 1-7, wherein the population of neural cells exhibits long-term function after the disruption of the patient's blood-brain barrier.
9. The method of any one of claims 1-8, wherein the population of neural cells maintains long-term survival in the patient after the patient experiences a subsequent disruption of the patient's blood-brain barrier that is secondary to a neurological disorder or condition.
10. The method of any one of claims 1-9, wherein the population of neural cells maintains long-term function in the patient after the patient experiences a subsequent disruption of the patient's blood-brain barrier that is secondary to a neurological disorder or condition.
11. The method of any one of claims 1-10, wherein the subsequent disruption of the patient's blood-brain barrier is due to an infection or a stroke.
12. The method of any one of claims 1-11, wherein the population of neural cells survives and/or functions in the patient for at least one month, two months, three months, four months or more after administration.

13. The method of any one of claims 1-12, wherein the patient is not administered an immunosuppressive agent before administration of the population of neural cells.

14. The method of any one of claims 1-13, wherein the patient is not administered an immunosuppressive agent after administration of the population of neural cells.

15. The method of any one of claims 1-14, wherein the patient requires a reduced level of immunosuppression or is substantially free of immunosuppression.

16. The method of any one of claims 1-15, wherein the neural cell is selected from the group consisting of a cerebral endothelial cell, a neuron, an ependymal cell, an astrocyte, a microglial cell, an oligodendrocyte, a Schwann cell, a progenitor thereof, and a precursor thereof.

17. The method of any one of claims 1-15, wherein the neural cell is a neural progenitor cell.

18. The method of any one of claims 1-15, wherein the neural cell is a glial progenitor cell.

19. The method of any one of claims 1-15, wherein the neural cell is a neuronal progenitor cell.

20. The method of any one of claims 1-19, wherein the microglial phagocytosis is associated with a neurological disorder or condition.

21. The method of any one of claims 9-20, wherein the neurological disorder or condition is selected from the group consisting of stroke, amyotrophic lateral sclerosis (ALS), cerebral hemorrhage, Parkinson's disease, epilepsy, spinal cord injury, childhood hereditary leukodystrophies, congenital dysmyelination, Pelizaeus-Merzbacher disease, metabolic leukodystrophies, vanishing white matter disease, adrenoleukodystrophy, Canavan's Disease, lysosomal storage diseases, Tay-Sachs disease, Sandhoff's disease, Krabbe's disease, Batten's disease, metachromatic leukodystrophy, cerebral palsy, periventricular leukomalacia, spastic diplegias of prematurity, age-related white matter loss, subcortical dementia, vascular Leukoencephalopathies, subcortical stroke, diabetic leukoencephalopathy, hypertensive leukoencephalopathy, spinal cord injury, autoimmune demyelination, progressive multiple sclerosis, transverse myelitis, inflammatory demyelination, radiation toxicity, neurodegenerative diseases, Huntington's Disease, frontotemporal dementia, and cerebrovascular disorders.

22. The method of any one of claims 9-20, wherein the neurological disorder or condition is Pelizaeus-Merzbacher disease.

23. The method of any one of claims 9-20, wherein the neurological disorder or condition is progressive multiple sclerosis.
24. The method of any one of claims 9-20, wherein the neurological disorder or condition is Huntington's Disease.
25. The method of any of claims 1-24, wherein the population of neural cells express CD47 at a higher level than in an unmodified pluripotent cell or in a unmodified neural cell.
26. The method of claims 1-25, wherein the population of neural cells express a suicide gene that is activated by a trigger that causes the neural cell to die.
27. A method for inhibiting microglial phagocytosis of a population of neural cells administered in a patient comprising administering to the patient a therapeutically effective amount of a population of neural cells comprising an exogenous CD47 polypeptide and reduced expression of B2M and/or CIITA.
28. The method of claim 27, wherein the population of neural cells comprises reduced expression of B2M or CIITA.
29. The method of claim 27, wherein the population of neural cells comprises reduced expression of B2M and CIITA.
30. The method of any one of claims 27-29, wherein the administering comprises grafting the population of neural cells into the patient's central or peripheral nervous system.
31. The method of claim 30, wherein the grafting comprises injecting the population of neural cells into the patient.
32. The method of claim 30 or 31, wherein the grafting comprises disrupting the patient's blood-brain barrier.
33. The method of any one of claims 27-32, wherein the population of neural cells exhibits long-term survival after the disruption of the patient's blood-brain barrier.
34. The method of any one of claims 27-33 wherein the population of neural cells exhibits long-term function after the disruption of the patient's blood-brain barrier.
35. The method of any one of claims 27-34, wherein the population of neural cells maintains long-term survival in the patient after the patient experiences a subsequent disruption of the patient's blood-brain barrier that is secondary to a neurological disorder or condition.

36. The method of any one of claims 27-35, wherein the population of neural cells maintains long-term function in the patient after the patient experiences a subsequent disruption of the patient's blood-brain barrier that is secondary to a neurological disorder or condition.

37. The method of any one of claims 32-36, wherein the subsequent disruption of the patient's blood-brain barrier is due to an infection or a stroke.

38. The method of any one of claims 27-37, wherein the population of neural cells survives and/or functions in the patient for at least one month, two months, three months, four months or more after administration.

39. The method of any one of claims 27-38, wherein the patient is not administered an immunosuppressive agent before administration of the population of neural cells.

40. The method of any one of claims 27-39, wherein the patient is not administered an immunosuppressive agent after administration of the population of neural cells.

41. The method of any one of claims 27-40, wherein the patient requires a reduced level of immunosuppression or is substantially free of immunosuppression.

42. The method of any one of claims 27-41, wherein the neural cell is selected from the group consisting of a cerebral endothelial cell, a neuron, an ependymal cell, an astrocyte, a microglial cell, an oligodendrocyte, a Schwann cell, a progenitor thereof, and a precursor thereof.

43. The neural cell of any one of claims 27-42, wherein the neural cell is a neural progenitor cell.

44. The neural cell of any one of claims 27-42, wherein the neural cell is a glial progenitor cell.

45. The neural cell of any one of claims 27-42, wherein the neural cell is a neuronal progenitor cell.

46. The method of any one of claims 27-45, wherein the microglial phagocytosis is associated with a neurological disorder or condition.

47. The method of any one of claims 35-46, wherein the neurological disorder or condition is selected from the group consisting of stroke, amyotrophic lateral sclerosis (ALS), cerebral hemorrhage, Parkinson's disease, epilepsy, spinal cord injury, childhood hereditary leukodystrophies, congenital dysmyelination, Pelizaeus-Merzbacher disease, metabolic leukodystrophies, vanishing white matter disease, adrenoleukodystrophy, Canavan's Disease,

lysosomal storage diseases, Tay-Sachs disease, Sandhoff's disease, Krabbe's disease, Batten's disease, metachromatic leukodystrophy, cerebral palsy, periventricular leukomalacia, spastic diplegias of prematurity, age-related white matter loss, subcortical dementia, vascular Leukoencephalopathies, subcortical stroke, diabetic leukoencephalopathy, hypertensive leukoencephalopathy, spinal cord injury, autoimmune demyelination, progressive multiple sclerosis, transverse myelitis, inflammatory demyelination, radiation toxicity, neurodegenerative diseases, Huntington's Disease, frontotemporal dementia, and cerebrovascular disorders.

48. The method of any one of claims 35-46, wherein the neurological disorder or condition is Pelizaeus-Merzbacher disease.

49. The method of any one of claims 35-46, wherein the neurological disorder or condition is progressive multiple sclerosis.

50. The method of any one of claims 35-46, wherein the neurological disorder or condition is Huntington's Disease.

51. The method of any one of claims 27-50, wherein the population of neural cells express CD47 at a higher level than in a parental pluripotent cell or in a unmodified neural cell.

52. The method of any one of claims 27-51, wherein the population of neural cells express a suicide gene that is activated by a trigger that causes the neural cell to die.

53. The method of any one of claims 27-52, wherein the population of neural cells are glial progenitor cells.

54. An *in-vitro* method for producing a therapeutically effective amount of a population of human neural cells from a population of human pluripotent stem cells comprising the steps of a) genetically modifying human pluripotent stem cells to i) reduce expression of MHC class I human leukocyte antigens and/or MHC class II human leukocyte antigens in the human pluripotent stem cells and ii) overexpress an exogenous CD47 polypeptide in the human pluripotent stem cells, b) differentiating the human pluripotent stem cells into neural cells; and c) assaying the neural cells for a hypoinmunogenicity phenotype and/or one or more neural cell-specific markers, gene expression, or gene expression profile.

55. The method of claim 54, wherein step a) further comprises genetically modifying human pluripotent stem cells to reduce expression of MHC class I and MHC class II human leukocyte antigens.

56. The method of claim 54, wherein step a) further comprises genetically modifying human pluripotent stem cells to reduce expression of MHC class I and MHC class II human leukocyte antigens.

57. The method of any one of claims 54-56, wherein the human pluripotent stem cells of step a) express CD47 at a level higher than in the population of human pluripotent stem cells before step a).

58. The method of any one of claims 54-57, wherein the human neural cells of step b) or c) express CD47 at a level higher than in an unmodified neural cell or a neuronal cell not genetically modified by step a).

59. The method of any one of claims 54-56, wherein the human neural cells of step b) or c) have reduced expression of MHC class I human leukocyte antigens and/or MHC class II human leukocyte antigens compared to an unmodified human neural cell or a neuronal cell not genetically modified by step a).

60. The method of any one of claims 54-59, wherein step a) further comprises iii) express a suicide gene in the human pluripotent stem cells.

61. The method of any one of claims 54-60, wherein the assaying of the human neural cells in step c) comprises assaying for the hypoimmunogenicity phenotype by Elispot, ELISA, FACS, PCR, or mass cytometry (CYTOF).

62. An isolated neural cell comprising an exogenous CD47 polypeptide and reduced expression of MHC class I and/or class II human leukocyte antigens, wherein the cell evades immune recognition when administered to a patient.

63. The isolated neural cell of claim 62, wherein the isolated neuronal cell further comprises reduced expression of MHC class I and class II human leukocyte antigens.

64. The isolated neural cell of claim 62 or 63, wherein the isolated neural cell is selected from the group consisting of a cerebral endothelial cell, a neuron, an ependymal cell, an astrocyte, a microglial cell, an oligodendrocyte, a Schwann cell, a progenitor thereof, and a precursor thereof.

65. The isolated neural cell of any one of claims 62-64, wherein the isolated neural cell is a neural progenitor cell.

66. The isolated neural cell of any one of claims 62-64, wherein the isolated neural cell is a glial progenitor cell.

67. The isolated neural cell of any one of claims 62-64, wherein the isolated neural cell is a neuronal progenitor cell.

68. The isolated neural cell of any one of claims 62-64, wherein the isolated neural cell is a cerebral endothelial cell.

69. The isolated neural cell of any one of claims 62-64, wherein the isolated neural cell is a dopamine neuron.

70. The isolated neural cell of any one of claims 62-69, wherein the isolated neural cell evades immune recognition *in vitro*.

71. The isolated neural cell of any one of claims 62-70, wherein the isolated neural cell evades immune recognition when grafted into a patient's central or peripheral nervous system.

72. The isolated neural cell of any one of claims 62-71, wherein the isolated neural cell undergoes, exhibits, or stimulates reduced microglial phagocytosis *in vitro*.

73. The isolated neural cell of any one of claims 62-72, wherein the isolated neural cell undergoes, exhibits, or stimulates reduced microglial phagocytosis when grafted into a patient's central nervous system.

74. The isolated neural cell of any one of claims 62-73, wherein the isolated neural cell has reduced expression of B2M and/or CIITA.

75. The isolated neural cell of any one of claims 62-74, wherein the isolated neural cell comprises one or more CD47 transgenes.

76. The isolated neural cell of claim 75, wherein expression of the one or more CD47 transgene is controlled by constitutive promoters.

77. The isolated neural cell of claim 75, wherein expression of the one or more CD47 transgene is controlled by neuronal specific promoters.

78. A composition comprising a population of the isolated neural cells of any one of claims 62-77 **Error! Reference source not found.**

79. The composition of claim 78, further comprising a pharmaceutically acceptable carrier.

80. A method for treating a neurological disorder or condition in a patient comprising administering to the patient a therapeutically effective amount of a population of neural cells comprising an exogenous CD47 polypeptide and reduced expression of MHC class I human

leukocyte antigens and/or MHC class I human leukocyte antigens, wherein population of the neural cells undergoes, exhibits, or stimulates reduced microglial phagocytosis upon administration.

81. The method of claim 80, wherein the administering comprises grafting the population of neural cells into the patient's central or peripheral nervous system.

82. The method of claim 81, wherein the grafting comprises injecting the population of neural cells into the patient.

83. The method of claim 81 or 82, wherein the grafting comprises disrupting the patient's blood-brain barrier.

84. The method of any one of claims 80-83, wherein the population of neural cells exhibits long-term survival after the disruption of the patient's blood-brain barrier.

85. The method of any one of claims 80-84, wherein the population of neural cells exhibits long-term function after the disruption of the patient's blood-brain barrier.

86. The method of any one of claims 80-85, wherein the population of neural cells maintains long-term survival in the patient after the patient experiences a subsequent disruption of the patient's blood-brain barrier that is secondary to the neurological disorder or condition.

87. The method of any one of claims 80-86, wherein the population of neural cells maintains long-term function in the patient after the patient experiences a subsequent disruption of the patient's blood-brain barrier that is secondary to the neurological disorder or condition.

88. The method of any one of claims 80-87, wherein the subsequent disruption of the patient's blood-brain barrier is due to an infection or a stroke.

89. The method of any one of claims 80-88, wherein the population of neural cells survives and/or functions in the patient for at least one month, two months, three months, four months or more after administration.

90. The method of any one of claims 80-89, wherein the patient is not administered an immunosuppressive agent before, during, and/or after administration of the population of neural cells.

91. The method of any one of claims 80-90, wherein the patient requires a reduced level of immunosuppression or is substantially free of immunosuppression.

92. The method of any one of claims 80-91, wherein the neural cell is selected from the group consisting of a cerebral endothelial cell, a neuron, an ependymal cell, an astrocyte, a

microglial cell, an oligodendrocyte, a Schwann cell, a progenitor thereof, and a precursor thereof.

93. The method of any one of claims 80-92, wherein the neural cell is a neural progenitor cell.

94. The method of any one of claims 80-92, wherein the neural cell is a glial progenitor cell.

95. The method of any one of claims 80-92, wherein the neural cell is a neuronal progenitor cell.

96. The method of any one of claims 80-95, wherein the neurological disorder or condition is selected from the group consisting of stroke, amyotrophic lateral sclerosis (ALS), cerebral hemorrhage, Parkinson's disease, epilepsy, spinal cord injury, childhood hereditary leukodystrophies, congenital dysmyelination, Pelizaeus-Merzbacher disease, metabolic leukodystrophies, vanishing white matter disease, adrenoleukodystrophy, Canavan's Disease, lysosomal storage diseases, Tay-Sachs disease, Sandhoff's disease, Krabbe's disease, Batten's disease, metachromatic leukodystrophy, cerebral palsy, periventricular leukomalacia, spastic diplegias of prematurity, age-related white matter loss, subcortical dementia, vascular Leukoencephalopathies, subcortical stroke, diabetic leukoencephalopathy, hypertensive leukoencephalopathy, spinal cord injury, autoimmune demyelination, progressive multiple sclerosis, transverse myelitis, inflammatory demyelination, radiation toxicity, neurodegenerative diseases, Huntington's Disease, frontotemporal dementia, and cerebrovascular disorders.

97. The method of any one of claims 80-95, wherein the neurological disorder or condition is Pelizaeus-Merzbacher disease.

98. The method of any one of claims 80-95, wherein the neurological disorder or condition is progressive multiple sclerosis.

99. The method of any one of claims 80-95, wherein the neurological disorder or condition is Huntington's Disease.

100. A neural cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neural cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

101. The neural cell of claim 100, wherein the neural cell is selected from the group consisting of a cerebral endothelial cell, a neuron, an ependymal cell, an astrocyte, a microglial cell, an oligodendrocyte, a Schwann cell, a progenitor thereof, and a precursor thereof.

102. The neural cell of any one of claims 100-101, wherein the neural cell is a neural progenitor cell.

103. The neural cell of any one of claims 100-101, wherein the neural cell is a glial progenitor cell.

104. The neural cell of any one of claims 100-101, wherein the neural cell is a neuronal progenitor cell.

105. A cerebral endothelial cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the cerebral endothelial cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

106. The cerebral endothelial cell of claim 105, wherein the cell forms vasculature when administered to a patient's brain.

107. A microglial cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the microglial cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

108. An oligodendrocyte *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the oligodendrocyte undergoes, exhibits, or stimulates reduced microglial phagocytosis.

109. A Schwann cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the Schwann cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

110. An astrocyte *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the astrocyte undergoes, exhibits, or stimulates reduced microglial phagocytosis.

111. An ependymal cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the ependymal cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

112. A neuron *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

113. The neuron of claim 112, wherein the neuron is a dopamine neuron.

114. A dopamine neuron *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

115. An isolated neural cell comprising an exogenous CD24 polypeptide and reduced expression of MHC class I human leukocyte antigens and/or MHC class II human leukocyte antigens, wherein the isolated neural cell evades immune recognition when administered to a patient.

116. The isolated neural cell of claim 115, wherein the isolated neural cell is selected from the group consisting of a cerebral endothelial cell, a neuron, an ependymal cell, an astrocyte, a microglial cell, an oligodendrocyte, a Schwann cell, a progenitor thereof, and a precursor thereof.

117. The isolated neural cell of claim 115 or 116, wherein the isolated neural cell is a neural progenitor cell.

118. The isolated neural cell of claim 115 or 116, wherein the isolated neural cell is a glial progenitor cell.

119. The isolated neural cell of claim 115 or 116, wherein the isolated neural cell is a neuronal progenitor cell.

120. The isolated neural cell of claim 115 or 116, wherein the neural cell is a cerebral endothelial cell.

121. The isolated neural cell of any one of claims 115-120, wherein the neural cell evades immune recognition *in vitro*.

122. The isolated neural cell of any one of claims 115-121, wherein the neural cell evades immune recognition when grafted into a patient's central or peripheral nervous system.

123. The isolated neural cell of any one of claims 115-122, wherein the neural cell undergoes, exhibits, or stimulates reduced microglial phagocytosis *in vitro*.

124. The isolated neural cell of any one of claims 115-123, wherein the neural cell undergoes, exhibits, or stimulates reduced microglial phagocytosis when grafted into a patient's central nervous system.

125. The isolated neural cell of any one of claims 115-124, wherein the neural cell has reduced expression of B2M and/or CIITA.

126. The isolated neural cell of any one of claims 115-125, wherein the neural cell comprises one or more CD24 transgenes.

127. The isolated neural cell of claim 126, wherein expression of the one or more CD47 transgene is controlled by constitutive promoters.

128. The isolated neural cell of claim 126, wherein expression of the one or more CD47 transgene is controlled by neuronal specific promoters.

129. A composition comprising a population of the isolated neural cells of any one of claims 115-128.

130. The composition of claim 129, further comprising a pharmaceutically acceptable carrier.

131. A method for treating a neurological disorder or condition in a patient comprising administering to the patient a therapeutically effective amount of a population of neural cells comprising an exogenous CD24 polypeptide and reduced expression of MHC class I and/or MHC class II human leukocyte antigens.

132. The method of claim 131, further comprises reduced expression of MHC class I and MHC class II human leukocyte antigens.

133. The method of claim 131 or 132, wherein the administering comprises grafting the population of neural cells into the patient's central or peripheral nervous system.

134. The method of claim 133, wherein the grafting comprises injecting the population of neural cells into the patient.

135. The method of claim 133 or 134, wherein the grafting comprises disrupting the patient's blood-brain barrier.

136. The method of any one of claims 131-135, wherein the population of neural cells maintains long-term survival after the disruption of the patient's blood-brain barrier.

137. The method of any one of claims 131-136, wherein the population of neural cells maintains long-term function after the disruption of the patient's blood-brain barrier.

138. The method of any one of claims 131-137, wherein the population of neural cells maintains long-term survival in the patient after the patient experiences a subsequent disruption of the patient's blood-brain barrier that is secondary to the neurological disorder or condition.

139. The method of any one of claims 131-138, wherein the population of neural cells maintains long-term function in the patient after the patient experiences a subsequent disruption of the patient's blood-brain barrier that is secondary to the neurological disorder or condition.

140. The method of any one of claims 131-139, wherein the subsequent disruption of the patient's blood-brain barrier is due to an infection or a stroke.

141. The method of any one of claims 131-140, wherein the population of neural cells survives and/or functions in the patient for at least one month, two months, three months, four months or more after administration.

142. The method of any one of claims 131-141, wherein the patient is not administered an immunosuppressive agent before administration of the population of neural cells.

143. The method of any one of claims 131-142, wherein the patient is not administered an immunosuppressive agent after administration of the population of neural cells.

144. The method of any one of claims 131-143, wherein the patient requires a reduced level of immunosuppression or is substantially free of immunosuppression.

145. The method of any one of claims 131-144, wherein the neural cell is selected from the group consisting of a cerebral endothelial cell, a neuron, an ependymal cell, an astrocyte, a microglial cell, an oligodendrocyte, a Schwann cell, a progenitor thereof, and a precursor thereof.

146. The method of any one of claims 131-144, wherein the neural cell is a neural progenitor cell.

147. The method of any one of claims 131-144, wherein the neural cell is a glial progenitor cell.

148. The method of any one of claims 131-144, wherein the neural cell is a neuronal progenitor cell.

149. The method of any one of claims 131-148, wherein the neurological disorder or condition is selected from the group consisting of stroke, amyotrophic lateral sclerosis (ALS), cerebral hemorrhage, Parkinson's disease, epilepsy, spinal cord injury, childhood hereditary leukodystrophies, congenital dysmyelination, Pelizaeus-Merzbacher disease, metabolic leukodystrophies, vanishing white matter disease, adrenoleukodystrophy, Canavan's Disease, lysosomal storage diseases, Tay-Sachs disease, Sandhoff's disease, Krabbe's disease, Batten's disease, metachromatic leukodystrophy, cerebral palsy, periventricular leukomalacia, spastic diplegias of prematurity, age-related white matter loss, subcortical dementia, vascular Leukoencephalopathies, subcortical stroke, diabetic leukoencephalopathy, hypertensive leukoencephalopathy, spinal cord injury, autoimmune demyelination, progressive multiple sclerosis, transverse myelitis, inflammatory demyelination, radiation toxicity, neurodegenerative diseases, Huntington's Disease, frontotemporal dementia, and cerebrovascular disorders.

150. The method of any one of claims 131-148, wherein the neurological disorder or condition is Pelizaeus-Merzbacher disease.

151. The method of any one of claims 131-148, wherein the neurological disorder or condition is progressive multiple sclerosis.

152. The method of any one of claims 131-148, wherein the neurological disorder or condition is Huntington's Disease.

153. A neural cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neural cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

154. The neural cell of claim 153, wherein the neural cell is selected from the group consisting of a cerebral endothelial cell, a neuron, an ependymal cell, an astrocyte, a microglial cell, an oligodendrocyte, a Schwann cell, a progenitor thereof, and a precursor thereof.

155. The neural cell of claim 153 or 154, wherein the neural cell is a neural progenitor cell.

156. The neural cell of claim 153 or 154, wherein the neural cell is a glial progenitor cell.

157. The neural cell of claim 153 or 154, wherein the neural cell is a neuronal progenitor cell.

158. A cerebral endothelial cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the cerebral endothelial cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

159. The cerebral endothelial cell of claim 158, wherein the cell forms vasculature when administered to a patient's brain.

160. A microglial cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the microglial cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

161. An oligodendrocyte *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the oligodendrocyte undergoes, exhibits, or stimulates reduced microglial phagocytosis.

162. A Schwann cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the Schwann cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

163. An astrocyte *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the astrocyte undergoes, exhibits, or stimulates reduced microglial phagocytosis.

164. An ependymal cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the ependymal cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

165. A neuron *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

166. The neuron of claim 165, wherein the neuron is a dopamine neuron.

167. A dopamine neuron *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

168. Use of a neural cell to treat a neurological disease, comprising an isolated neural cell comprising an exogenous CD47 polypeptide and reduced expression of MHC class I and/or class II human leukocyte antigens, wherein the cell evades immune recognition when administered to a patient.

169. Use of a neural cell to treat a neurological disease, comprising a neural cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neural cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

170. Use of a neural cell to treat a neurological disease, comprising a cerebral endothelial cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the cerebral endothelial cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

171. Use of a neural cell to treat a neurological disease, comprising a microglial cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the microglial cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

172. Use of a neural cell to treat a neurological disease, comprising an oligodendrocyte *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the oligodendrocyte undergoes, exhibits, or stimulates reduced microglial phagocytosis.

173. Use of a neural cell to treat a neurological disease, comprising a Schwann cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii)

reduced expression levels of B2M and/or CIITA, wherein the Schwann cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

174. Use of a neural cell to treat a neurological disease, comprising an astrocyte *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the astrocyte undergoes, exhibits, or stimulates reduced microglial phagocytosis.

175. Use of a neural cell to treat a neurological disease, comprising an ependymal cell *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the ependymal cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

176. Use of a neural cell to treat a neurological disease, comprising a neuron *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

177. Use of a neural cell to treat a neurological disease, comprising a dopamine neuron *in vitro* differentiated from a stem cell expressing an exogenous CD47 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

178. Use of a neural cell to treat a neurological disease, comprising an isolated neural cell comprising an exogenous CD24 polypeptide and reduced expression of MHC class I human leukocyte antigens and/or MHC class II human leukocyte antigens, wherein the isolated neural cell evades immune recognition when administered to a patient.

179. Use of a neural cell to treat a neurological disease, comprising a neural cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neural cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

180. Use of a neural cell to treat a neurological disease, comprising a cerebral endothelial cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the cerebral endothelial cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

181. Use of a neural cell to treat a neurological disease, comprising a microglial cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the microglial cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

182. Use of a neural cell to treat a neurological disease, comprising an oligodendrocyte *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the oligodendrocyte undergoes, exhibits, or stimulates reduced microglial phagocytosis.

183. Use of a neural cell to treat a neurological disease, comprising a Schwann cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA,, wherein the Schwann cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

184. Use of a neural cell to treat a neurological disease, comprising an astrocyte *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA,, wherein the astrocyte exhibits undergoes, exhibits, or stimulates reduced microglial phagocytosis.

185. Use of a neural cell to treat a neurological disease, comprising an ependymal cell *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the ependymal cell undergoes, exhibits, or stimulates reduced microglial phagocytosis.

186. Use of a neural cell to treat a neurological disease, comprising a neuron *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced

expression levels of B2M and/or CIITA, wherein the neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

187. Use of a neural cell to treat a neurological disease, comprising a dopamine neuron *in vitro* differentiated from a stem cell expressing an exogenous CD24 polypeptide and expressing: i) reduced expression levels of MHC class I and/or II human leukocyte antigens and/or ii) reduced expression levels of B2M and/or CIITA, wherein the neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

188. The use of any one of claims 168-187, wherein the neurological disorder or condition is selected from the group consisting of stroke, amyotrophic lateral sclerosis (ALS), cerebral hemorrhage, Parkinson's disease, epilepsy, spinal cord injury, childhood hereditary leukodystrophies, congenital dysmyelination, Pelizaeus-Merzbacher disease, metabolic leukodystrophies, vanishing white matter disease, adrenoleukodystrophy, Canavan's Disease, lysosomal storage diseases, Tay-Sachs disease, Sandhoff's disease, Krabbe's disease, Batten's disease, metachromatic leukodystrophy, cerebral palsy, periventricular leukomalacia, spastic diplegias of prematurity, age-related white matter loss, subcortical dementia, vascular Leukoencephalopathies, subcortical stroke, diabetic leukoencephalopathy, hypertensive leukoencephalopathy, spinal cord injury, autoimmune demyelination, progressive multiple sclerosis, transverse myelitis, inflammatory demyelination, radiation toxicity, neurodegenerative diseases, Huntington's Disease, frontotemporal dementia, and cerebrovascular disorders.

189. The use of any one of claims 165-187, wherein the neurological disorder or condition is Pelizaeus-Merzbacher disease.

190. The use of any one of claims 165-187, wherein the neurological disorder or condition is progressive multiple sclerosis.

191. The use of any one of claims 165-187, wherein the neurological disorder or condition is Huntington's Disease.

192. A dopamine neuron *in vitro* differentiated from a stem cell, wherein the dopamine neuron expresses an exogenous CD47 polypeptide, wherein the dopamine neuron has reduced expression levels of B2M and CIITA, and wherein the dopamine neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

193. A dopamine neuron *in vitro* differentiated from a stem cell, wherein the dopamine neuron expresses an exogenous CD24 polypeptide, wherein the dopamine neuron has

reduced expression levels of B2M and CIITA, and wherein the dopamine neuron undergoes, exhibits, or stimulates reduced microglial phagocytosis.

194. A glial progenitor cell *in vitro* differentiated from a stem cell, wherein the glial progenitor cell expresses an exogenous CD47 polypeptide, wherein the glial progenitor cell has reduced expression levels of B2M and CIITA, and wherein the glial progenitor cell undergoes, exhibits, or stimulates reduced microglial phagocytosis or evades microglial phagocytosis.

195. A glial progenitor cell *in vitro* differentiated from a stem cell, wherein the glial progenitor cell expresses an exogenous CD24 polypeptide, wherein the glial progenitor cell has reduced expression levels of B2M and CIITA, and wherein the glial progenitor cell undergoes, exhibits, or stimulates reduced microglial phagocytosis or evades microglial phagocytosis.