Claims

1. Use of cells in the form of non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, and rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers having a desired potency for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation in the manufacture of a medicament for the treatment of inflammation in a subject having a condition selected from the group consisting of acute and chronic conditions in central nervous system injury that involve macrophage activation, e.g., ischemic stroke, multiple sclerosis, Alzheimer's Disease, ALS, Parkinson's Disease, hypoxic-ischemia, neonatal hypoxic ischemia, and traumatic brain or spinal cord injury, wherein potency is assessed by an assay selected from the group consisting of (1) assay for macrophage activation factor expressed in or secreted by the cells, (2) assay for macrophage activation, (3) assay for antigen presentation of macrophages, and (4) assay for morphological changes of macrophages during activation wherein the cells are contacted *in vitro* with macrophages in (2)-(4) and then the cells having the desired potency in the form of the medicament are to be administered to the subject in a therapeutically effective amount and for a time sufficient to achieve a therapeutic result.

2. Use of cells in the form of non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, and rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers, having a desired potency for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation in the manufacture of a medicament for the treatment of inflammation in a subject having a condition selected from the group consisting of acute and chronic conditions in central nervous system injury that involve macrophage activation, e.g., ischemic stroke, multiple sclerosis, Alzheimer's Disease, ALS, Parkinson's Disease, hypoxic-ischemia, neonatal hypoxic ischemia, and traumatic brain or spinal cord injury, wherein the medicament is to be administered in a therapeutically effective amount and for a time sufficient to achieve a therapeutic result, wherein prior to administration, the cells were validated as having the desired potency wherein potency is assessed by an assay selected from the group consisting of (1) assay for macrophage activation factor expressed in or secreted by the cells, (2) assay for macrophage activation, (3) assay for antigen presentation of macrophages, and (4) assay for

morphological changes of macrophages during activation, wherein the cells are contacted *in vitro* with macrophages in (2)-(4).

3. Use of cells in the form of non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, and rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation in a subject in the manufacture of a medicament for the treatment of a condition, selected from the group consisting of acute and chronic conditions in central nervous system injury that involve macrophage activation, e.g., ischemic stroke, multiple sclerosis, Alzheimer's Disease, ALS, Parkinson's Disease, hypoxic-ischemia, neonatal hypoxic ischemia, and traumatic brain or spinal cord injury, wherein the cells are first to be assayed for a desired potency for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation, wherein potency is assessed by an assay selected from the group consisting of (1) assay for macrophage activation factor expressed in or secreted by the cells, (2) assay for macrophage activation, (3) assay for antigen presentation of macrophages, and (4) assay for morphological changes of macrophages during activation, wherein the cells are contacted *in vitro* with macrophages in (2)-(4) and the cells having the desired potency to the subject, are to be subsequently be administered in a therapeutically effective amount and for a time sufficient to achieve a therapeutic result.

4. Use of cells in the form of non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, and rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation in a subject in the manufacture of a medicament for the treatment of having a condition selected from the group consisting of acute and chronic conditions in central nervous system injury that involve macrophage activation, e.g., ischemic stroke, multiple sclerosis, Alzheimer's Disease, ALS, Parkinson's Disease, hypoxic-ischemia, neonatal hypoxic ischemia, and traumatic brain or spinal cord injury, wherein the medicament in the form of cells having a desired potency for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation, wherein potency is assessed by an assay selected from the group consisting of (1) assay for macrophage activation factor expressed in or secreted by the cells, (2) assay for macrophage activation, (3) assay for antigen presentation of macrophages, and (4) assay for morphological changes of macrophages

during activation, wherein the cells are contacted *in vitro* with macrophages in (2)-(4) to the subject, is to be administered in a therapeutically effective amount and for a time sufficient to achieve a therapeutic result, and wherein, prior to administration, the cells were validated as having the desired potency.

5. The use of any of claims 1-4, wherein the cells of the medicament are allogeneic.

6. The use of any of claims 1-5 wherein the subject is human.

7. The use of any of claims 1-6 wherein the cells are derived from bone marrow.

8. The use of claim 7 wherein the cells are derived from human bone marrow.

9. Cells in the form of non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, or rox-1 and can differentiate into cell types of f endodermal, ectodermal, and mesodermal germ layers for use in treating inflammation in a subject having a condition, wherein the cells are assayed for a desired potency for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation, wherein potency is assessed by an assay selected from the group consisting of (1) assay for macrophage activation factor expressed in or secreted by the cells, (2) assay for macrophage activation, (3) assay for antigen presentation of macrophages, and (4) assay for morphological changes of macrophages during activation, wherein the cells are contacted *in vitro* with macrophages in (2)-(4) and wherein the cells having the desired potency are then to be administered to the subject in a therapeutically effective amount and for a time sufficient to achieve a therapeutic result.

10. Cells in the form of non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, or rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers for use in treating inflammation in a subject having a condition, wherein the cells having a desired potency for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation to the subject, are to be administered in a therapeutically effective amount and for a time sufficient to achieve a therapeutic result, and wherein, prior to administration, the cells were

validated as having the desired potency, wherein potency is assessed by an assay selected from the group consisting of (1) assay for macrophage activation factor expressed in or secreted by the cells, (2) assay for macrophage activation, (3) assay for antigen presentation of macrophages, and (4) assay for morphological changes of macrophages during activation, wherein the cells are contacted *in vitro* with macrophages in (2)-(4).

11. Cells in the form of non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, or rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers for use in increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation in a subject having a condition, whereby the cells are initially assayed for a desired potency for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation, wherein potency is assessed by an assay selected from the group consisting of (1) assay for macrophage activation factor expressed in or secreted by the cells, (2) assay for macrophage activation, (3) assay for antigen presentation of macrophages, and (4) assay for morphological changes of macrophages during activation, wherein the cells are contacted *in vitro* with macrophages in (2)-(4) and the cells having the desired potency are to be administered to the subject, in a therapeutically effective amount and for a time sufficient to achieve a therapeutic result.

12. Cells in the form of non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, or rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers for use in increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation to a subject, whereby the cells are to be administered in a therapeutically effective amount and for a time sufficient to achieve a therapeutic result, and wherein, prior to administration, the cells are validated as having a desired potency for increasing neuroprotective (M2) and/or decreasing neurotoxic (M1) activation, wherein potency is assessed by an assay selected from the group consisting of (1) assay for macrophage activation factor expressed in or secreted by the cells, (2) assay for macrophage activation, (3) assay for antigen presentation of macrophages, and (4) assay for morphological changes of macrophages during activation, wherein the cells are contacted *in vitro* with macrophages in (2)-(4).

13. The use of any of claims 9-12, wherein the cells of the medicament are allogeneic.

14. The use of any of claims 9-13 wherein the subject is human.

15. The use of any of claims 9-13 wherein the cells are derived from bone marrow.

16. The use of claim 15 wherein the cells are derived from human bone marrow.

17. An *in vitro* method for determining an effective amount of cells (I) for administration to a subject having a condition, wherein the condition is selected from the group consisting of acute and chronic conditions in central nervous system injury that involve macrophage activation, e.g., stroke; ischemic stroke, multiple sclerosis, Alzheimer's Disease, ALS, Parkinson's Disease, hypoxic-ischemia, neonatal hypoxic ischemia, and traumatic brain or spinal cord injury, the cells (I) being non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, and rox-1, and can differentiate into cell types of endodermal, ectodermal, or mesodermal germ layers, the method comprising assessing *in vitro* in a sample from the subject, following administration of the cells (I) to the subject, a biomarker of activated macrophage, wherein the biomarker is selected from the group comprising down regulation of pro-inflammatory cytokines and up-regulation of anti-inflammatory cytokines, wherein a down-regulation of pro-inflammatory cytokines or up-regulation of anti-inflammatory cytokines indicates that the amount of cells (I) administered is an effective amount.

18. The method of claim 17, wherein the administered cells (I) are allogeneic.

19. The method of any preceding claim, wherein the administered cells (I) increase neuroprotective (M2) and/or decrease neurotoxic (M1) activation.

20. The method of any preceding claim, wherein the subject is human.

21. An *in vitro* method for constructing a cell bank, the method comprising, expanding and storing cells (I) for future administration to a subject, the cells being non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, and rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers, wherein the cells (I) are assayed for having the desired potency for decreasing macrophage activation state M1, wherein potency is

assessed by an assay selected from the group consisting of (1) assay for the presence of a factor that suppresses M1 activation expressed in or secreted by the cells (I), (2) assay for macrophage activation state M1, (3) assay for antigen presentation by macrophages in activation state M1, and (4) assay for morphological changes of macrophages during activation to activation state M1, wherein the cells (I) are contacted with the macrophages in (2)-(4).

22. An *in vitro* method for drug discovery, the method comprising, exposing cells (I) in vitro that have a desired potency for decreasing macrophage activation state M1 to an agent to assess the effect of the agent, the cells (I) being non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, or rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers, wherein the cells (I) are assayed for having the desired potency for decreasing macrophage activation state M1 wherein potency is assessed by an assay selected from the group consisting of (1) assay for the presence of a factor that suppresses M1 activation expressed in or secreted by the cells (I), (2) assay for macrophage activation state M1, (3) assay for antigen presentation by macrophages in activation state M1, and (4) assay for morphological changes of macrophages during activation to activation state M1, wherein the cells (I) are contacted with the macrophages in (2)-(4).

23. A method of assaying cells (I), *in vitro*, for having a desired potency for decreasing macrophage activation state M1, the cells (I) being non-embryonic stem, non-germ cells that express oct4, telomerase, rex-1, or rox-1 and can differentiate into cell types of endodermal, ectodermal and mesodermal germ layers, wherein potency is assessed by an assay selected from the group consisting of (1) assay for the presence of a factor that suppresses M1 activation expressed in or secreted by the cells (I), (2) assay for macrophage activation state M1, (3) assay for antigen presentation by macrophages in activation state M1, and (4) assay for morphological changes of macrophages during activation to activation state M1, wherein the cells (I) are contacted with the macrophages in (2)-(4).

24. The method of any preceding claim, wherein the cells (I) are human cells.

25. The method of any preceding claim wherein the cells (I) are derived from bone marrow.