Claims

1. A method for making an induced neural stem cell, comprising:

providing a somatic cell;

transfecting or transducing said somatic cell with a nucleic acid encoding Sox2, whereby said somatic cell expresses Sox2; and then

transdifferentiating said somatic cell, wherein said transdifferentiating is carried out by growing said somatic cell in a neural progenitor medium, to thereby make said induced neural stem cell, wherein said transdifferentiating is carried out for a time of from 1 to 10 days.

2. The method of claim 1, wherein said transdifferentiating is carried out for a time of from 1 to 5 days.

3. The method of claim 1, wherein said transdifferentiating is carried out for a time of from 1 to 3 days.

4. The method of any one of claims 1-3, wherein said somatic cell is a fibroblast cell.

5. The method of any one of claims 1-3, wherein said somatic cell is a skin fibroblast cell.

6. The method of any one of claims 1-5, wherein said induced neural stem cell expresses nestin and/or does not express Nanog or OCT3/4.

7. The method of any one of claims 1-6, wherein said induced neural stem cell is capable of differentiating into a neural/astrocyte cell.

8. The method of any one of claims 1-7, wherein said method comprises transducing said somatic cell with a lentiviral vector comprising said nucleic acid encoding Sox2.

9. The method of any one of claims 1-8, wherein said transdifferentiating is carried out

without feeder cells.

10. The method of any one of claims 1-9, wherein said neural progenitor medium comprises one or more ingredients selected from the group consisting of: DMEM/F12; N2 supplement; insulin; neurobasal medium; B27 supplement; non-essential amino acids; bME; L-glutamine; Glutamax; SB431542; LDN193189; retinoic acid; BSA; CHIR99021; transferrin; sodium selenite; and cAMP.

11. The method of any one of claims 1-10, wherein said method further comprises transfecting or transducing said somatic cell with a nucleic acid encoding TERT *(e.g.,* hTERT).

12. The method of any one of claims 1-11, wherein said method further comprises loading said induced neural stem cell with a therapeutic agent and/or a reporter molecule.

13. The method of claim 12, wherein said loading comprises transfecting or transducing said induced neural stem cell with a nucleic acid capable of producing a therapeutic agent, and wherein said therapeutic agent is a protein toxin, an oncolytic virus, a pro-apoptotic agent, or an enzyme useful for enzyme/prodrug therapy.

14. The method of claim 13, wherein said nucleic acid capable of producing a therapeutic agent and said nucleic acid encoding Sox2 are provided on the same vector.

15. The method of any one of claims 1-14, wherein said method further comprises growing said somatic cell to form a population of somatic cells prior to said transdifferentiation.

16. The method of any one of claims 1-15, wherein said method further comprises encapsulating said induced neural stem cell in a hydrogel or seeding said induced neural stem cell onto a scaffold.

17. Use of the induced neural stem cell produced by the method of any one of claims 1-16, in the manufacture of a medicament for the treatment of brain cancer in a subject in need thereof, wherein the induced neural stem cell comprises a therapeutic agent.

18. The use of claim 17, wherein said induced neural stem cell is allogeneic, syngeneic or autologous with respect to said subject.

19. The use of claim 17 or claim 18, wherein said subject is a human subject.

20. The use of any one of claims 17-19, wherein said brain cancer is glioblastoma.

21. The use of claim 20, wherein the medicament is to be administered by intracavity administration after surgical removal of at least a part of a brain tumor.

22. The use of any of claims 17-21, wherein said induced neural stem cell is autologous with respect to said subject and wherein the administration is to be carried out 1 to 14 days after said provision of the somatic cell.