remyelination (11), regeneration is ascribed directly to transfer of hematopoietic cells from the younger parabiont.

[0005] Despite these benefits, parabiont pairings, that is, the sharing of circulations between a younger and an older animal, is not practical due to ABO blood group incompatibilities. Parabiosis is also complicated by parabiotic intoxication, a form of runting disease or graft versus host disease (3), due to the immune cells of the younger animal attacking the organs of the older parabiont.

SUMMARY

[0006] The methods described herein are based on the discovery that nonviable pluripotent stem cells can be used to for transbiosis (heterochronic cellular transplantation) to improve age-related declines in tissue and organ function, including, for example, improving cognition, slowing the progression of age-related cognitive impairment, and improving age-related cardiac impairment.

[0006a] In one aspect, the present disclosure provides a use of a composition comprising an amount of nonviable pluripotent stem cells effective to improve age-related organ or tissue dysfunction in the manufacture of a medicament, wherein the medicament is to be administered by one or more of topical, enteral, subcutaneous, intraperitoneal, intramuscular, and intravascular administration for improving age-related organ or tissue dysfunction in a subject in need thereof, and wherein the age-related organ or tissue dysfunction is selected from: improving cognition; and/or slowing the progression of cognitive impairment.

[0006b] In one aspect, the present disclosure provides a use of a stem cell composition consisting essentially of an amount of mammalian nonviable lyophilized pluripotent stem cells in the manufacture of a medicament for reducing cardiac weight in a mammalian subject in need thereof, wherein the mammalian nonviable lyophilized pluripotent stem cells are of the same species as the mammal in need thereof.

[0007] As described herein, nonviable pluripotent stem cells are administered to a subject in need of treatment therewith to provide a physiologically younger phenotype and function to an organ or tissue by the transplantation of the nonviable pluripotent stem cells.

[0008] In one approach, a method is provided for improving cognition in a subject in need thereof, the method comprising administering a composition comprising an amount of nonviable pluripotent stem cells effective to improve cognition in the subject.

[0009] In another approach, a method is provided for slowing the progression of cognitive impairment in a subject with age-related cognitive impairment, the method comprising administering a composition comprising an amount of nonviable pluripotent stem cells effective to slow the progression of cognitive impairment in the subject.

[0010] In yet another approach, a method is provided for improving age-related organ or tissue dysfunction in a subject in need thereof, the method comprising administering a composition comprising an amount of nonviable pluripotent stem cells effective to improve age-related organ or tissue dysfunction in the subject.

[0011] The term "effective amount," "therapeutically effective amount," or similar phrase means the amount that will elicit the biological or medical response of a subject that is being

CLAIMS

What is claimed is:

1. Use of a composition comprising an amount of nonviable pluripotent stem cells effective to improve age-related organ or tissue dysfunction in the manufacture of a medicament, wherein the medicament is to be administered by one or more of topical, enteral, subcutaneous, intraperitoneal, intramuscular, and intravascular administration for improving age-related organ or tissue dysfunction in a subject in need thereof, and wherein the age-related organ or tissue dysfunction is selected from:

improving cognition; and/or

slowing the progression of cognitive impairment.

2. The use according to claim 1, further comprising preparing the composition by mixing nonviable pluripotent stem cells with liquid media.

3. The use according to claim 2, wherein the liquid media comprises saline.

4. The use according to any one of claims 1 to 3, wherein the subject is a human.

5. The use according to any one of claims 1 to 4, wherein the nonviable pluripotent stem cells are lyophilized pluripotent stem cells.

6. The use according to any one of claims 1 to 4, wherein the nonviable pluripotent stem cells are lethally irradiated pluripotent stem cells.

7. The use according to any one of claims 1 to 6, wherein the pluripotent stem cells do not include conditioned media.

8. The use according to any one of claims 1 to 7, wherein the pluripotent stem cells are embryonic stem cells.

9. Use of a stem cell composition consisting essentially of an amount of mammalian nonviable lyophilized pluripotent stem cells in the manufacture of a medicament for reducing cardiac weight in a mammalian subject in need thereof, wherein the mammalian nonviable lyophilized pluripotent stem cells are of the same species as the mammal in need thereof.

10. The use according to claim 9, wherein the composition is prepared by mixing the nonviable pluripotent stem cells with liquid media.

11. The use according to claim 10, wherein the liquid media comprises saline.

12. The use according to claim 9, wherein the subject is a human.

13. The use according to claim 9, wherein the stem cell composition does not include conditioned media.

14. The use according to claim 9, wherein the pluripotent stem cells are embryonic stem cells.