Claims

1. A method comprising exposing an organ to exogenous stem cells *ex vivo*, wherein the stem cells are multipotent adult progenitor cells (MAPCs) characterized in that they are non-embryonic, non-germ cells that express telomerase and can differentiate into cell types of at least two of endodermal, ectodermal, and mesodermal germ layers, wherein the stem cells have undergone at least 10-40 cell doublings in cell culture prior to their exposure to the organ, wherein the organ is exposed to the stem cells prior to transplantation into a recipient.

2. The method of claim 1, wherein the stem cells express one or more of oct4, rex-1, or rox-1 and can differentiate into cell types of endodermal, ectodermal, and mesodermal germ layers.

3. The method of claim 2, wherein the stem cells are non-HLA matched, allogeneic cells.

4. The method of claim 1, wherein the stem cells have undergone at least 30-35 cell doublings.

5. The method of claim 1, wherein the concentration of stem cells exposed to the organ is about 1 x 10^6 cells/ml to about 10 x 10^6 cells/ml.

6. The method of claim 1, wherein the stem cells are exposed to the organ for about 2-4 hours.

7. The method of claim 1, wherein the stem cells are contained in a fluid for perfusion into the organ or in a carrier for intra-organ administration.

8. The method of claim 1, wherein the stem cells are contained in a medium in which the organ is bathed prior to transplantation.

9. The method of claim 1, wherein the organ is selected from the group consisting of lung, kidney, heart, liver, pancreas, thymus, gastrointestinal tract, and composite allografts.

10. The method of claim 1, wherein exposure to the stem cells reduces inflammation in the organ.

11. The method of claim 1, wherein exposure to the stem cells reduces the occurrence of inflammatory cells in the organ.

12. The method of claim 1, wherein exposure to the stem cells reduces inflammatory cytokines in the organ.

13. The method of claim 1, wherein exposure to the stem cells reduces ischemic-reperfusion injury.

14. The method of claim 1 wherein the stem cells are derived from human bone marrow.