CLAIMS

1. Use of a population of mesenchymal lineage precursor cells (MPCs) enriched for STRO-1^{bright} cells in the manufacture of a medicament for treating or preventing heart failure in a human subject in need thereof, the subject having an elevated left ventricular end systolic volume (LVESV) of greater than 70 mL.

2. Use according to Claim1, in which the elevated LVESV is due to acute myocardial infarction.

3. Use according to Claim 1, in which the elevated LVESV is due to chronic congestive heart failure.

4. Use according to Claim 1, 2 or 3, in which the subject has an LVESV of greater than 80 mL.

5. Use according to any preceding claim, in which the subject has an LVESV of greater than 90 mL.

6. Use according to any preceding claim, in which the subject has an LVESV of greater than 100 mL.

7. Use according to any preceding claim, in which the subject has an LVESV of greater than 110 mL.

8. Use according to any preceding claim, in which the medicament is capable of being administered to the subject by a catheter-based system.

9. Use according to Claim 8 in which the medicament is capable of being administered to the subject by transendocardial injection, intracoronary infusion, intravenous infusion or transepicardial injection.

10. Use according to any preceding claim, in which the subject has a left ventricular ejection fraction (LVEF) of less than or equal to about 35%.

11. Use according to any preceding claim, in which the subject has a left ventricular end diastolic volume (LVEDV) of greater than 150 mL.

12. Use according to Claim 1 in which the heart failure is due to hypertension, cardiomyopathy (ischemic or non-ischemic), myocarditis, obesity, or diabetes.

13. Use according to any preceding claim, in which the subject has a left ventricle infarct size of between about 5% and 30%.

14. Use according to any preceding claim, in which the medicament contains between 1 x 10^6 and 8 x 10^8 cells.

15. Use according to Claim 14, in which the medicament contains about 1.5 x 10^8 cells.

16. Use according to any preceding claim, in which the cells are to be administered in the form of a composition together with a pharmaceutically acceptable carrier and/or excipient.

17. Use according to any preceding claim, in which the cells have been expanded in culture prior to administration.