CLAIMS

1. Use of a composition comprising a population of culture expanded mesenchymal lineage precursor or stem cells (MLPSCs) or conditioned media obtained therefrom in the preparation of a medicament for the treatment of congenital heart disease in a subject.

2. Use according to Claim 1, in which the subject has hypoplastic left heart syndrome.

3. Use according to Claim 1 or 2, in which the MLPSCs are allogenic.

4. Use according to Claim 1, 2 or 3, in which the composition is to be administered to the heart wall of the left ventricle.

5. Use according to any preceding claim, in which:

(i) treatment increases left ventricular end diastolic volume (LVEDV) and/or left ventricular end systolic volume (LVESV) from baseline 12 months after administering the composition, preferably in which LVEDV and/or LVESV is increased relative to a subject with a comparable congenital heart disease that has not been administered MLPSCs;

(ii) treatment increases left ventricular end diastolic pressure (LVEDP) from baseline 12 months after administering the composition, preferably by at least 5 mmHg; and/or

(iii) treatment increases LV stroke volume, preferably in which LV stroke volume is increased by at least 5 to 20 ml/m^2.

6. Use according to any preceding claim, in which:

(i) the MLPSCs in the composition have been culture expanded in a cell culture media comprising at least one pro-inflammatory cytokine, preferably in which the media contains serum which comprises the pro-inflammatory cytokine(s);

(ii) the MLPSCs in the composition have been culture expanded in a cell culture media comprising newborn mammalian serum;

(iii) the MLPSCs in the composition have been culture expanded in a cell culture media comprising a non-fetal serum;

(iv) the MLPSCs in the composition have been culture expanded in a cell culture media comprising newborn calf serum (NBCS); and/or

(v) the MLPSCs in the composition have been culture expanded in a cell culture media comprising 5% (v/v) NBCS.

7. Use according to any preceding claim, in which the MLPSCs are mesenchymal precursor cells (MPCs).

8. Use according to any preceding claim, in which the MLPSCs are mesenchymal stem cells (MSCs).

9. Use according to any preceding claim, in which the MLPSCs have been cryopreserved prior to administration.

10. Use according to any preceding claim, in which the composition further comprises Plasma-Lyte A, dimethyl sulfoxide (DMSO), human serum albumin (HSA), preferably in which the composition comprises greater than $6.68x10^6$ viable cells/mL.

11. Use according to any of Claims 1 to 7, 9 or 10, in which the composition comprises human bone marrow-derived allogeneic MPCs isolated from bone mononuclear cells with anti-STRO-3 antibodies, expanded *ex vivo* in culture media comprising NBCS, and cryopreserved.

12. Use of a composition comprising a population of culture expanded mesenchymal lineage precursor or stem cells (MLPSCs) or conditioned media obtained therefrom in the preparation of a medicament for the treatment of congenital heart disease in a subject, in which the composition is to be administered as an adjuvant therapy prior to definitive left ventricular surgery.

13. Use according to Claim 12, in which the subject has hypoplastic left heart syndrome.

14. Use according to Claim 12 or 13, in which:

(i) the definitive left ventricular surgery is a bidirectional Glenn surgery;

(ii) the definitive left ventricular surgery is performed within 2 years of administering the composition; and/or

(iii) the definitive left ventricular surgery is performed at least 12 months after administering the composition.

15. Use of a composition comprising a population of culture expanded mesenchymal lineage precursor or stem cells (MLPSCs) or conditioned media obtained therefrom in the preparation of a medicament for the improvement of left ventricular function in a subject suffering from congenital heart disease, in which the composition comprises the MLPSCs in an amount effective to increase left ventricular end diastolic volume (LVEDV), left ventricular end systolic volume (LVESV), LV stroke volume, and/or left ventricular end diastolic pressure (LVEDP).

16. Use according to Claim 15, in which LVEDV, LVESV, LV stroke volume, and/or LVEDP is increased from baseline 12 months after administering the composition.

17. Use according to Claim 15 or 16, in which:

LVEDV is increased by at least 50 ml/m^2, preferably 65 ml/m^2, preferably 80 ml/m^2, preferably between 60 ml/m^2 and 120 ml/m^2;

LVESV is increased by at least 15 ml/m^2, preferably 20 ml/m^2, preferably 25 ml/m^2, preferably between 20 ml/m^2 and 50 ml/m^2;

LV stroke volume is increased by at least 5 to 20 ml/m^2; and/or

LVEDP is increased by at least 5 mmHg.

18. Use according to any preceding claim, in which the MLPSCs are culture expanded from a population of cells which comprise about 0.1% to 75% STRO-1+ cells, optionally in which the population of cells which comprise about 0.1% to 75% STRO-1+ cells are isolated using a STRO-3 antibody.