

CLAIMS

1. A method for obtaining human mesenchymal lineage precursor or stem cells suitable for administration for the treatment of a degenerative disc disease, the method comprising:
 - (i) culturing a population comprising human mesenchymal lineage precursor or stem cells;
 - (ii) determining the amount of TGF β 1 released by the human mesenchymal lineage precursor or stem cells into the culture medium; and
 - (iii) selecting the human mesenchymal lineage precursor cells or stem cells for administration if and only if they release TGF β 1 into the culture medium in an amount of at least about 2800 pg/10⁶ cells, in which the selected cells are capable of stimulating collagen production in annulus fibrosus cells (AFCs) *in vitro*.
2. A method according to Claim 1, in which the population is enriched for human mesenchymal lineage precursor or stem cells.
3. A method according to Claim 1 or 2, in which the culturing comprises seeding the cells in a culture vessel at a density of about 50,000 viable cells/cm².
4. A method according to Claim 1, 2 or 3, in which the population is cultured in chondrogenic basal medium supplemented with 0.5% bovine serum albumin.
5. A method according to any preceding claim, in which the population is cultured for at least 68 to 76 hours.
6. A method according to any preceding claim, in which the method comprises collecting a sample of the culture medium in which the cells were cultured.
7. A method according to Claim 6, in which the method comprises activating latent TGF β 1 in the culture medium prior to determining the amount of TGF β 1 in the culture medium.
8. A method according to Claim 7, in which activating latent TGF β 1 comprises adding an acid to the culture medium sample to lower the pH of the culture medium.
9. A method according to Claim 8, in which the method comprises concentrating the culture medium sample prior to lowering the pH.

10. A method according to Claim 8 or 9, in which, following addition of the acid, the culture medium is neutralised to a pH of 7.2 to 7.6.

5 11. A method according to any preceding claim, in which the method comprises determining the amount of TGF β 1 in the culture medium by enzyme-linked immunosorbent assay (ELISA).

12. A method according to any preceding claim, in which the stimulated collagen production from the AFCs *in vitro* is at least 0.23 μ g.

10 13. Use of a composition comprising human mesenchymal lineage precursor cells or stem cells selected by a method according to any preceding claim in the manufacture of a medicament for treatment of a degenerative disc disease.

14. Use according to Claim 13, in which the composition further comprises a cryopreservative.

15 15. Use according to Claim 13 or 14, in which the composition further comprises hyaluronan.

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1. A method for obtaining human mesenchymal lineage precursor or stem cells suitable for administration for the treatment of a degenerative disc disease, the method comprising:
 - (i) culturing a population comprising human mesenchymal lineage precursor or stem cells;
 - (ii) determining the amount of TGF β 1 released by the human mesenchymal lineage precursor or stem cells into the culture medium; and
 - (iii) selecting the human mesenchymal lineage precursor cells or stem cells for administration if and only if they release TGF β 1 into the culture medium in an amount of at least about 2800 pg/10⁶ cells, in which the selected cells are capable of stimulating collagen production in annulus fibrosus cells (AFCs) *in vitro*.
2. A method according to Claim 1, in which the population is enriched for human mesenchymal lineage precursor or stem cells.
3. A method according to Claim 1 or 2, in which the culturing comprises seeding the cells in a culture vessel at a density of about 50,000 viable cells/cm².
4. A method according to Claim 1, 2 or 3, in which the population is cultured in chondrogenic basal medium supplemented with 0.5% bovine serum albumin.
5. A method according to any preceding claim, in which the population is cultured for at least 68 to 76 hours.
6. A method according to any preceding claim, in which the method comprises collecting a sample of the culture medium in which the cells were cultured.
7. A method according to Claim 6, in which the method comprises activating latent TGF β 1 in the culture medium prior to determining the amount of TGF β 1 in the culture medium.
8. A method according to Claim 7, in which activating latent TGF β 1 comprises adding an acid to the culture medium sample to lower the pH of the culture medium.
9. A method according to Claim 8, in which the method comprises concentrating the culture medium sample prior to lowering the pH.

10. A method according to Claim 8 or 9, in which, following addition of the acid, the culture medium is neutralised to a pH of 7.2 to 7.6.
11. A method according to any preceding claim, in which the method comprises determining the amount of TGF β 1 in the culture medium by enzyme-linked immunosorbent
5 assay (ELISA).
12. A method according to any preceding claim, in which the stimulated collagen production from the AFCs *in vitro* is at least 0.23 μ g.