mesenchymal stem cells such as DMEM/F12 medium supplemented with bovine foetal serum qualified for mesenchymal stem cells(MSCQ).

In order to overcome these problems this invention relates to a novel culture medium for hMSC on which hMSC that do not grow in other culture medium formulations can grow. In one aspect, there is provided a ~~the~~ culture medium ~~according to this invention comprises:~~ for human mesenchymal stem cells, comprising:

a) ~~Basal medium normally used for the culture of~~ mesenchymal stem cell~~s~~ basal medium;

b) human leucocyte/platelet coat ~~lysate~~ (buffy coat~~; LBC~~) lysate;

c) insulin;

d) sodium selenite;

e) ethanolamine; and

f) basic fibroblast growth factor (bFGF).

As used in this document the term "culture medium" relates to a nutrient solution for the culturing, growth or proliferation of cells. The term "cell culture" refers to cells which are maintained, cultivated or grown in an artificial *in vitro* environment.

The term "basal media" or "basal medium" used in this document refers to any medium in which human mesenchymal cells are capable of growing when supplemented with different supplements, which may or may not contain serum. Basal media provide standard inorganic salts such as zinc, iron, magnesium, calcium and potassium, together with vitamins, glucose, a buffer system and essential amino acids.

Preferably the basal medium normally used for the culture of mesenchymal cells in the culture medium according to this invention is DMEM/F12 + pyruvate,

CLAIMS

1. A culture medium for human mesenchymal stem cells, comprising:

a) mesenchymal stem cell basal medium ;

b) human leucocyte/platelet coat (buffy coat) lysate;

c) insulin;

d) sodium selenite;

e) ethanolamine; and

f) basic fibroblast growth factor (bFGF)

2. The culture medium for human mesenchymal cells according to claim 1, wherein the mesenchymal stem cell basal medium is DMEM/F12 + pyruvate, Ham's F10, Ham's F12, MCDB 131 or RPMI 1640.

3. The culture medium for human mesenchymal cells according to claim 2, wherein the human leucocyte/platelet coat (buffy coat) lysate is present in the culture medium in a quantity of 5 to 20% (v/v).

4. The culture medium for human mesenchymal cells according to claim 3, wherein the human leucocyte/platelet coat (buffy coat) lysate is present in the culture medium in a quantity of 7 to 15% (v/v).

5. The culture medium for human mesenchymal cells according to claim 4, wherein the insulin is present in a quantity of 2 to 20 mg/L.

6. The culture medium for human mesenchymal cells according to claim 5, wherein the insulin is present in a quantity of 5 to 15 mg/L.

7. The culture medium for human mesenchymal cells according to claim 6, wherein the sodium selenite is present in a quantity of 0.005 to 1.730 mg/L.

8. The culture medium for human mesenchymal cells according to claim 7, wherein the ethanolamine is present in a quantity of 1 to 8 mg/L.

9. The culture medium for human mesenchymal cells according to claim 8, wherein the ethanolamine is present in a quantity of 2 to 5 mg/L.

10. The culture medium for human mesenchymal cells according to claim 9, wherein the bFGF is present in a quantity of 5 to 25 ng/mL.

11. The culture medium for human mesenchymal cells according to claim 10, further comprising an antibiotic.

12. The culture medium for human mesenchymal cells according to claim 11, wherein the antibiotic is a mixture of gentamycin and amphotericin.

13. The culture medium for human mesenchymal cells according to claim 12, wherein said medium is supplemented with foetal bovine serum (FBS) in a quantity of 10% to 20% (v/v).

CLAIMS

1. A culture medium for human mesenchymal cells, comprising:

a) mesenchymal stem cell basal medium ;

b) human leucocyte/platelet coat lysate (buffy coat);

c) insulin;

d) sodium selenite;

e) ethanolamine; and

f) basic fibroblast growth factor (bFGF)

2. The culture medium for human mesenchymal cells according to claim 1, wherein the mesenchymal stem cell basal medium is DMEM/F12 + pyruvate, Ham's F10, Ham's F12, MCDB 131 or RPMI 1640.

3. The culture medium for human mesenchymal cells according to claim 2, wherein the human leucocyte/platelet coat lysate (buffy coat) is present in the culture medium in a quantity of 5 to 20% (v/v).

4. The culture medium for human mesenchymal cells according to claim 3, wherein the human leucocyte/platelet coat lysate (buffy coat) is present in the culture medium in a quantity of 7 to 15% (v/v).

5. The culture medium for human mesenchymal cells according to claim 4, wherein the insulin is present in a quantity of 2 to 20 mg/L.

6. The culture medium for human mesenchymal cells according to claim 5, wherein the insulin is present in a quantity of 5 to 15 mg/L.

7. The culture medium for human mesenchymal cells according to claim 6, wherein the sodium selenite is present in a quantity of 0.005 to 1.730 mg/L.

8. The culture medium for human mesenchymal cells according to claim 7, wherein the ethanolamine is present in a quantity of 1 to 8 mg/L.

9. The culture medium for human mesenchymal cells according to claim 8, wherein the ethanolamine is present in a quantity of 2 to 5 mg/L.

10. The culture medium for human mesenchymal cells according to claim 9, wherein the bFGF is present in a quantity of 5 to 25 ng/mL.

11. The culture medium for human mesenchymal cells according to claim 10, further comprising an antibiotic.

12. The culture medium for human mesenchymal cells according to claim 11, wherein the antibiotic is a mixture of gentamycin/amphotericin.

13. The culture medium for human mesenchymal cells according to claim 12, wherein said medium is supplemented with foetal bovine serum (FBS) in a quantity of 10% to 20% (v/v).

14. The culture medium for human mesenchymal cells according to claim 12, wherein said medium is supplemented with cell culture supplement derived from human

plasma (CCS) in a quantity of 10% to 40% (v/v).

