THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method of extending *ex vivo* viability of a HPC and/or HSC population, or culturing or expanding a HPC and/or HSC population said method comprising culturing the HPC and/or HSC population in the presence of at least one of ficolin-1, ficolin-2, ficolin-3, or fragments or functional equivalents thereof.

2. The method according to claim 1, wherein renewal capacity and/or pluripotency of the HPC and/or HSC is maintained or increased.

3. The method according to claim 1 or claim 2, wherein the HSC and/or HPC are further cultured in an environment wherein a concentration of oxygen is less than a normal ambient oxygen concentration.

4. The method according to any one of claims 1 – 3, wherein the HSC and/or HPC are cultured in the presence of at least one of ficolin-1, ficolin-2, ficolin-3, and fragments or functional equivalents thereof at a concentration of in the range of approximately 50 ng/ml - 200 ng/ml.

5. The method according to claim 4, wherein the HSC and/or HPC are cultured in the presence of ficolin-1 or fragments or functional equivalents thereof.

6. The method according to any one of claims 3 – 5, wherein the concentration of oxygen is less than approximately 20%.

7. The method according to any one of claims 3 – 6, wherein the concentration of oxygen is less then approximately 12%.

8. The method according to any one of claims 3 – 7, wherein the concentration of oxygen is between approximately of 5% - 10%.

9. The method according to any one of claims 3 – 8, wherein the concentration of oxygen is approximately 5%.

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10. The method according to any one of claims 1 – 9, wherein the HSC and/or HPC are cultured in the presence of growth factors selected from the group comprising interleukins 3, 6 and 11, stem cell factor, stem cell ligand, FLT-3 ligand, and thrombopoietin.

11. The method according to any one of claims 1 – 10, wherein the HSC and/or HPC are cultured in the presence of growth factors thrombopoietin, stem cell factor, Flt-3 ligand and interleukin 6.

12. The method according to claims 10 or claim 11, wherein the growth factors are provided at a concentration of about 50 ng/mL – 100 ng/mL.

13. The method according to claim 11 wherein thrombopoietin is provided at about 50 ng/mL, stem cell factor is provided at about 50 ng/mL, Flt-3 ligand is provided at about 80ng/mL and interleukin 6 is provided at about 100 ng/mL

14. The method according to any one of claims 1 – 13, wherein the HPC are cultured to increase the number of HPC relative to the initial number of HPCs to produce a second amount of HPCs.

15. The method according to claim 14, wherein the second amount of HPC are isolated and further cultured in a separate culture medium.

16. The method according to claim 15, wherein the separate culture medium comprises a growth factor selected from the group comprising interleukins 3, 6 and 11, stem cell factor, stem cell ligand, FLT-3 ligand, and thrombopoietin that promotes HPC maintenance, expansion and/or differentiation, to produce differentiated cells of hematopoietic origin.

17. The method according to claim 16, wherein the medium includes inoculated stromal cells and/or is a stromal cell conditioned medium.

18. The method according to any one of claims 1 to 17, wherein the HPC are cultured for a period of 6 – 8 weeks prior to expansion and/or differentiation of HPC and/or HSC.

19. The method according to any one of claims 1 – 18, wherein the HSC are obtained from blood products selected from the group comprising unfractionated bone marrow, umbilical cord, peripheral blood, liver, thymus, lymph and spleen. .

20. A medium when used for expanding *in vitro* populations of HSC and/or HPC in culture including hematopoietic growth factors selected from the group comprising interleukins 3, 6 and 11, stem cell factor, stem cell ligand, FLT-3 ligand, and thrombopoietin and at least one agent to enhance the self-renewal and/or inhibits the differentiation of HSC or HPC selected from the group consisting of ficolin-1, ficolin-2, ficolin-3, and fragments or functional equivalents thereof.

21. The medium according to claim 20, wherein the ficolin-1, ficolin-2, ficolin-3, or fragments or functional equivalents thereof are present at a concentration in the range of approximately 50 ng/ml - 200 ng/ml

22. The medium according to claim 21, wherein the at least one agent is ficolin-1 or a fragment or functional equivalent thereof.

23. A population of cells derived from HSC and/or HPC when cultured according to the method of any one of claims 1 – 19 wherein the populations of cells derived from HSC and/or HPC are expanded compared to the population prior to culture.

24. A population of cells derived from HSC and/or HPC when cultured using the medium of any one of claims 20 – 22 wherein the populations of cells derived from HSC and/or HPC are expanded compared to the population prior to culture.

25. The population of cells derived from HSC and/or HPC when cultured using the culture medium of any one of claims 20 – 22 and when used according to the method of any one of claims 1 – 19.

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26. The population of cells derived from HSC and/or HPC according to any one of claims 23 – 25 wherein the derived cells are expanded HSC and/or HPC cells populations.

27. The population of cells derived from HSC and/or HPC according to any one of claims 23 – 25 wherein the cells are CD34+ cells, CD34+CD133+ and CD34+CD38- cells.

28 The population of cells according to any one of claims 23 – 27 wherein the cells can be formulated for clinical haemopoietic stem cell transplantation, or for augmentation of haemopoietic function in a subject in need thereof.

29. The population of cells according to claim 28, wherein the subject is a human.

30. A method of treating a condition associated with an absence of haemopoietic function, comprising administering to a subject in need thereof a therapeutically effective amount of a population of cells according to any one of claims 23 – 27.

31. The method of claim 30, wherein the subject is a mammal.

32. The method of claim 31, wherein the mammal is a human.

33. The method according to claim 1, substantially as hereinbefore described with reference to any of the examples and/or figures.

34. The medium according to claim 20, substantially as hereinbefore described with reference to any of the examples and/or figures.

CLAIMS

1. A method of extending *ex vivo* viability of a HPC and/or HSC population, or culturing or expanding a HPC and/or HSC population the method comprising culturing the HPC and/or HSC population in the presence of at least one of ficolin-1, ficolin-2, ficolin-3, or fragments or functional equivalents thereof.

2. A method according to Claim 1, in which renewal capacity and/or pluripotency of the HPC and/or HSC is maintained or increased.

3. A method according to Claim 1 or 2, in which the HSC and/or HPC are further cultured in an environment in which a concentration of oxygen is less than a normal ambient oxygen concentration.

4. A method according to any of Claims 1 to 3, in which the HSC and/or HPC are cultured in the presence of at least one of ficolin-1, ficolin-2, ficolin-3, and fragments or functional equivalents thereof at a concentration of in the range of approximately 50 ng/ml to 200 ng/ml.

5. A method according to Claim 4, in which the HSC and/or HPC are cultured in the presence of ficolin-1 or fragments or functional equivalents thereof.

6. A method according to any of Claims 3 to 5, in which the concentration of oxygen is less than approximately 20%.

7. A method according to any of Claims 3 to 6, in which the concentration of oxygen is less then approximately 12%.

8. A method according to any of Claims 3 to 7, in which the concentration of oxygen is between approximately of 5% to 10%.

9. A method according to any of Claims 3 to 8, in which the concentration of oxygen is approximately 5%.

10. A method according to any preceding claim, in which the HSC and/or HPC are cultured in the presence of growth factors selected from the group comprising interleukins 3, 6 and 11, stem cell factor, stem cell ligand, FLT-3 ligand, and thrombopoietin.

11. A method according to any preceding claim, in which the HSC and/or HPC are cultured in the presence of growth factors thrombopoietin, stem cell factor, Flt-3 ligand and interleukin 6.

12. A method according to Claim 10 or 11, in which the growth factors are provided at a concentration of about 50 ng/mL to 100 ng/mL.

13. A method according to Claim 11, in which thrombopoietin is provided at about 50 ng/mL, stem cell factor is provided at about 50 ng/mL, Flt-3 ligand is provided at about 80ng/mL and interleukin 6 is provided at about 100 ng/mL

14. A method according to any preceding claim, in which the HPC are cultured to increase the number of HPC relative to the initial number of HPCs to produce a second amount of HPCs.

15. A method according to Claim 14, in which the second amount of HPC are isolated and further cultured in a separate culture medium.

16. A method according to Claim 15, in which the separate culture medium comprises a growth factor selected from the group comprising interleukins 3, 6 and 11, stem cell factor, stem cell ligand, FLT-3 ligand, and thrombopoietin that promotes HPC maintenance, expansion and/or differentiation, to produce differentiated cells of hematopoietic origin.

17. A method according to Claim 16, in which the medium includes inoculated stromal cells and/or is a stromal cell conditioned medium.

18. A method according to any preceding claim, in which the HPC are cultured for a period of 6 to 8 weeks prior to expansion and/or differentiation of HPC and/or HSC.

19. A method according to any preceding claim, in which the HSC are obtained from blood products selected from the group comprising unfractionated bone marrow, umbilical cord, peripheral blood, liver, thymus, lymph and spleen.

20. A medium when used for expanding *in vitro* populations of HSC and/or HPC in culture including hematopoietic growth factors selected from the group comprising interleukins 3, 6 and 11, stem cell factor, stem cell ligand, FLT-3 ligand, and thrombopoietin and at least one agent to enhance the self-renewal and/or inhibits the differentiation of HSC or HPC selected

from the group consisting of ficolin-1, ficolin-2, ficolin-3, and fragments or functional equivalents thereof.

21. A medium according to Claim 20, in which the ficolin-1, ficolin-2, ficolin-3, or fragments or functional equivalents thereof are present at a concentration in the range of approximately 50 ng/ml to 200 ng/ml

22. A medium according to Claim 21, in which the at least one agent is ficolin-1 or a fragment or functional equivalent thereof.

23. A population of cells derived from HSC and/or HPC when cultured according to the method of any of Claims 1 to 19, in which the populations of cells derived from HSC and/or HPC are expanded compared to the population prior to culture.

24. A population of cells derived from HSC and/or HPC when cultured using the medium of any of Claims 20 to 22, in which the populations of cells derived from HSC and/or HPC are expanded compared to the population prior to culture.

25. A population of cells derived from HSC and/or HPC when cultured using the culture medium of any of Claims 20 to 22 and when used according to the method of any of Claims 1 to 19.

26. A population of cells derived from HSC and/or HPC according to any of Claims 23 to 25, in which the derived cells are expanded HSC and/or HPC cells populations.

27. A population of cells derived from HSC and/or HPC according to any of Claims 23 to 25, in which the cells are CD34+ cells, CD34+CD133+ and CD34+CD38- cells.

28 A population of cells according to any of Claims 23 to 27, in which the cells can be formulated for clinical haemopoietic stem cell transplantation, or for augmentation of haemopoietic function in a subject in need thereof.

29. A population of cells according to Claim 28, in which the subject is a human.

30. Use of a therapeutically effective amount of a population of cells according to any of Claims 23 to 27 in the preparation of a medicament for treating a condition associated with an absence of haemopoietic function.

31. Use according to Claim 30, in which the subject is a mammal.

32. Use according to Claim 31, in which the mammal is a human.