CLAIMS

1. A method for deriving a BAT cell from an adult stem cell, comprising culturing the stem cell in mesenchymal stem cell growth medium, and transferring the cell to a medium comprising Rosiglitazone, Dexamethasone, IBMX and BMP-7.

2. A method according to Claim 1, in which the cells are not transfected with transgenes.

3. A method according to Claim 1 or 2, in which 20% or more of the adult stem cells are differentiated into BAT cells.

4. A method according to Claim 3, in which 50% or more of the adult stem cells are differentiated into BAT cells.

5. A method according to any preceding claim, comprising exposing the stem cell to the following media combinations:

(i) StemPro MSC SFM (Invitrogen);

(ii) DMEM/F12, insulin, transferrin, BMP-7, T3, Dexamethasone, Rosiglitazone and IBMX; and optionally

(iii) DMEM/F12, insulin, transferrin, BMP-7, T3, Dexamethasone and Rosiglitazone.

6. A method according to Claim 5, in which step (iii) is repeated by refreshing the medium.

7. A method according to any preceding claim, in which the cells are exposed to the media sequentially, at three-day intervals.

8. A method according to any of Claims 1 to 6, in which the cells are exposed to the media contemporaneously.

9. A method according to any of Claims 1 to 4, comprising exposing the stem cell to the following media combinations:

(i) MSC SFM;

(ii) DMEM/F12, insulin, transferrin, BMP-7, T3, Dexamethasone, Rosiglitazone and IBMX; and

(iii) DMEM/F12, insulin, transferrin, BMP-7, T3, Dexamethasone and Rosiglitazone.

10. A method according to Claim 9, in which steps (ii) and (iii) are repeated by refreshing the medium.

11. A kit for deriving a BAT cell from an adult stem cell, comprising Rosiglitazone, Dexamethasone, IBMX and BMP-7.

12. A kit for deriving a BAT cell from an adult stem cell according to Claim 11, further comprising one or more of the following agents: BMP; insulin; transferrin; and T3.

13. A kit for deriving a BAT cell from an adult stem cell according to Claim 11 or 12 further comprising a basal media and/or preadipocytes and/or adMSCs and/or instruments for the extraction of adipose tissue.

CLAIMS

1. A method for deriving a BAT cell from an adult adipose tissue derived stem cell, comprising culturing the stem cell in mesenchymal stem cell growth medium, and transferring the cell to a medium comprising Rosiglitazone, Triidothyronine (T3), Dexamethasone, 3-isobutyl-1 –methylxanthine (IBMX) and BMP-7.

2. A method according to Claim 1, in which the cells are not transfected with transgenes.

3. A method according to Claim 1 or 2, in which 20% or more of the adult stem cells are differentiated into BAT cells.

4. A method according to Claim 3, in which 50% or more of the adult stem cells are differentiated into BAT cells.

5. A method according to any preceding claim, comprising exposing the stem cell to the following media combinations:

(i) MSC SFM (Invitrogen);

(ii) DMEM/F12, insulin, transferrin, BMP-7, T3, Dexamethasone, Rosiglitazone and 3-isobutyl-1 –methylxanthine (IBMX); and optionally

(iii) DMEM/F12, insulin, transferrin, BMP-7, T3, Dexamethasone and Rosiglitazone.

6. A method according to Claim 5, in which step (iii) is repeated by refreshing the medium.

7. A method according to any preceding claim, in which the cells are exposed to the media sequentially, at three-day intervals.

8. A method according to any of Claims 1 to 4, comprising exposing the stem cell to the following media combinations:

(i) MSC SFM;

(ii) DMEM/F12, insulin, transferrin, BMP-7, T3, Dexamethasone, Rosiglitazone and 3-isobutyl-1 –methylxanthine (IBMX); and

(iii) DMEM/F12, insulin, transferrin, BMP-7, T3, Dexamethasone and Rosiglitazone.

9. A method according to Claim 8, in which steps (ii) and (iii) are repeated by refreshing the medium.

10. A kit for deriving a BAT cell from an adult adipose tissue derived stem cell, comprising Rosiglitazone, Triidothyronine (T3), Dexamethasone, 3-isobutyl-1 –methylxanthine (IBMX) and BMP-7.

11. A kit for deriving a BAT cell from an adult stem cell according to Claim 10, further comprising one or more of the following agents: BMP; insulin; transferrin; and T3.

12. A kit for deriving a BAT cell from an adult stem cell according to Claim 10 or 11 further comprising a basal media and/or preadipocytes and/or adMSCs and/or instruments for the extraction of adipose tissue.