CLAIMS

1. A method for deriving a BAT cell from an adult adipose tissue derived stem cell, comprising culturing the adult adipose tissue derived stem cell in mesenchymal stem cell growth medium, and transferring the adult adipose tissue derived stem 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 adult adipose tissue derived stem cells are not transfected with transgenes.

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

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

5. A method according to any preceding claim, comprising exposing the adult adipose tissue derived stem cell to the following media combinations in sequence:

(i) MSC SFM (Invitrogen);

(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.

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

7. A method according to any preceding claim, in which the adult adipose tissue derived stem 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 adult adipose tissue derived stem cell to the following media combinations in sequence:

(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 exposure to step (ii) and (iii) is 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 adipose tissue derived stem cell according to Claim 10, further comprising one or more of the following agents: BMP; insulin; and transferrin.

12. A kit for deriving a BAT cell from an adult adipose tissue derived 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.