We claim,

1. A method of evaluating adipogenesis inhibition potential of forskolin, wherein forskolin is added separately to pre-adipocytes before differentiation and also to mature adipocytes, said process comprising steps of:

a) Seeding mammalian adipocyte precursor cells (pre-adipocytes) in wells of microplates, wherein approximately 60×10^4 cells are seeded for 48-72 hours to get 70-80% confluence;
b) Adding forskolin at concentrations of 50 µg/ml and 100 µg/ml in the pre-seeded microplates of step a consisting of undifferentiated pre-adipocytes;
c) Adding 200 µl of freshly prepared Adipogenesis induction medium to the wells;
d) Adding 200 µl of freshly prepared Adipogenesis progression medium after 72 hours of incubation with the Adipogenesis induction medium in step c;
e) Incubating the cells treated with forskolin in step b, adipogenesis induction medium in step c and adipogenesis progression medium in step d for 48 hours in a humidified atmosphere at 37ºC with 5% CO_2 and 95% air;
f) Fixing the cells of step e by adding 100 µl of 10% formalin and staining using the Oil Red O technique;
g) Reading the optical density of cells of step f at 492 nm in a microplate reader and expressing the results as inhibitory concentration (IC50) values using the graph pad prism software;
h) Calculating the percentage inhibition of adipogenesis in the cells of steps f and g using the formula, C-T/T×100, wherein C is the absorbance of Oil Red O in differentiating/undifferentiated cells and T is the absorbance of Oil Red O in sample treated differentiating/undifferentiated cells;
i) Adding 200 µl of freshly prepared Adipogenesis induction medium to the wells of step a;
j) Adding 200 µl of freshly prepared Adipogenesis progression medium comprising graded concentrations of forskolin of 50 µg/ml and 100 µg/ml respectively to the wells of step i after 72 hours of incubation with the Adipogenesis induction medium;

k) Incubating the cells treated with forskolin in step j, adipogenesis induction medium in step i and adipogenesis progression medium in step j for 48 hours in a humidified atmosphere at 37ºC with 5% CO_2 and 95% air;

l) Fixing the cells of step k by adding 100 µl of 10% formalin and staining using the Oil Red O technique;

m) Reading the optical density of cells of step l at 492 nm in a microplate reader and expressing the results as inhibitory concentration (IC50) values using the graph pad prism software;

n) Calculating the percentage inhibition of adipogenesis in the cells of steps l and m using the formula, C-T/T×100, wherein C is the absorbance of Oil Red O in differentiating/undifferentiated cells and T is the absorbance of Oil Red O in sample treated differentiating/undifferentiated cells; and

o) Comparing percentage inhibition of adipogenesis in the cells of steps h and n.

2. A method of determining the expression of secreted factors that selectively recruit brown adipose tissue (BAT), wherein forskolin is added separately to pre-adipocytes before differentiation and also to mature adipocytes, said method comprising:

a) Seeding mammalian adipocyte precursor cells (pre-adipocytes) in wells of microplates wherein approximately 60×10^4 cells are seeded for 48-72 hours to get 70-80% confluence;

b) Adding forskolin at concentrations of 50 µg/ml and 100 µg/ml in the pre-seeded microplates of step a consisting of undifferentiated pre-adipocytes and thereafter incubating the pre-adipocytes for 72 hours in a medium added to the wells of the microplates to form cells treated with forkolin;

c) Adding 200 µl of freshly prepared Adipogenesis induction medium to the wells;

d) Adding 200 µl of freshly prepared Adipogenesis progression medium after 72 hours of incubation with the Adipogenesis induction medium in step c;

e) Incubating the cells treated with forskolin in step b for 48 hours in a humidified atmosphere at 37ºC with 5% CO_2 and 95% air; and

f) Quantitatively determining by immunoassay techniques the expressions of bone morphogenetic protein-7 (BMP-7), bone morphogenetic

protein-4 (BMP-4), and vascular endothelial growth factor-A (VEGF-A) in the cell supernatant; wherein

the secreted factors that selectively recruit brown adipose tissue (BAT) comprise one or more members selected from the group consisting of BMP-7, BMP-4, and VEGF-A, and

the expression of the secreted factors that selectively recruit brown adipose tissue (BAT) is enhanced as measured when forskolin is administered to pre-adipocytes compared to mature adipocytes.

3. An *in vitro* method comprising administering forskolin in effective amounts to mammalian white pre-adipocytes to achieve a transformation of the white pre-adipocytes into brite or beige adipocytes, wherein

the mammalian white pre-adipocytes are administered forskolin by incubating the mammalian white pre-adipocytes with forskolin for at least a period of 72 hours, and the administration of the forskolin at concentrations of 50 µg/ml and 100 µg/ml results in the increased expression of at least one secretory factor selected from the group consisting of bone morphogenetic protein-7 (BMP-7), bone morphogenetic protein-4 (BMP-4), and vascular endothelial growth factor-A (VEGF-A).

4. The method according to claim 3, wherein the administration of the forskolin results in the increased expression of vascular endothelial growth factor-A (VEGF-A).

5. The method according to claim 3 wherein the administration of the forskolin results in the increased expression of secretory factors that function in combination, the secretory factors comprising bone morphogenetic protein-7 (BMP-7), bone morphogenetic protein-4 (BMP-4), and vascular endothelial growth factor-A (VEGF-A).

6. The method according to claim 3, wherein the administration of the forskolin results in the increased expression of bone morphogenetic protein-7 (BMP-7).

7. The method according to claim 3, wherein the administration of the forskolin results in the increased expression of bone morphogenetic protein-4 (BMP-4).

8. The method according to claim 3, wherein the administration of the forskolin results in the increased expression of secretory factors that function in combination, the secretory factors comprising bone morphogenetic protein-7 (BMP-7) and bone morphogenetic protein-4 (BMP-4).