



Supplementary information, Figure S2 Subcutaneous injection of ATM (15 μ M, 200 μ l for each mouse, twice a week for 8 weeks) inhibited HFD induced obesity and metabolic

disorders; i.p. injection of ATM (20 mg/kg body weight, twice a week for 8 weeks) did not affect the growth and metabolism of mice on normal chow diet.

- (A) The body weight of HFD obese mice subcutaneously treated with ATM for 8 weeks (n=8).
- (B) The morphology and weight ratio of adipose tissues of HFD obese mice subcutaneously treated with ATM for 8 weeks (n=8).
- (C) HE staining of adipose tissues of HFD obese mice subcutaneously treated with ATM for 8 weeks.
- (D) GTT and ITT of HFD obese mice after being subcutaneously treated with ATM for 8 weeks (n=5).
- (E) The HE staining of livers of HFD obese mice after being subcutaneously treated with ATM for 8 weeks.
- (F) The IHC of UCP1 in the inguinal fat of HFD obese mice after being subcutaneously treated with ATM for 8 weeks.
- (G) When exposed in cold environment for 6 hr, The rectal temperature of obese mice after being subcutaneously treated with ATM for 8 weeks (n=5).
- (H) The body weight of lean mice after being intraperitoneally treated with ATM for 8 weeks (n=8).
- (I) Representative image of adipose tissues of lean mice after being intraperitoneally treated with ATM for 8 weeks .
- (J) Representative HE staining of adipose tissues of lean mice after being intraperitoneally treated with ATM for 8 weeks .
- (K) GTT and ITT of lean mice after being intraperitoneally treated with ATM for 8 weeks (n=5).
- (L) Representative HE staining of liver of lean mice after being intraperitoneally treated with ATM for 8 weeks .
- (M) Exposed at 4°C, the rectal temperature of lean mice after being intraperitoneally treated with ATM for 8 weeks (n=5).

Comparison between ATM and control group were analyzed by student's *t* test, **p*<0.05.