Research Article

**Amycenone reduces excess body weight and attenuates hyperlipidemia by inhibiting lipogenesis and promoting lipolysis and fatty acid -oxidation in KK-*Ay* obese diabetic mice**

**Shortened version of the title**

Amycenone reduces excess body weight in KK-*Ay*mice

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**Supplement file legends and table**

**Fig. S1 The phosphorylation levels of AMPK in EAT, SAT, PAT, and MAT of KK-*Ay* mice with normal water or under amycenone treatment (0.76 g/kg body weight/day) for 8 weeks.**

Amycenone decreased the phosphorylation levels of AMPK in PAT and MAT of KK-*Ay* mice. (A, G) EAT, (B, H) SAT, (C-E, I-K) PAT and (F, L) MAT. White bars represent the control group and black bars represent the amycenone group. The data value is given as means ± S.E.M. (n = 9, 8, respectively), \**P* < 0.05, \*\**P* < 0.01 vs. control group.

**Fig. S2 The phosphorylation and expression levels of FAS, ACC, HSL, CaMKK, LKB1, PKA, and C/EBP in PAT of KK-*Ay*mice with normal water or under amycenone treatment (0.76 g/kg body weight/day) for 8 weeks.**

Amycenone increased phosphorylation levels of ACC, HSL, and PKA in PAT of KK-*Ay*mice. (A, H) FAS, (B, I) ACC, (C, J) HSL, (D, K) CaMKK, (E, L) LKB1, (F, M) PKA and (G, N) C/EBP. White bars represent the control group and black bars represent the amycenone group. The data value is given as means ± S.E.M. (n = 9, 8, respectively), \**P* < 0.05, \*\**P* < 0.01 vs. control group.

**Fig. S3 The phosphorylation and expression levels of HSL, ACC, CaMKK, LKB1, Sirt1, PKA, PPAR, C/EBP, and C/EBP in MAT of KK-*Ay* mice with normal water or under amycenone treatment (0.76 g/kg body weight/day) for 8 weeks.**

Amycenone enhanced phosphorylation levels of ACC, CaMKK, and PKA and reduced the expression level of PPAR in MAT of KK-*Ay* mice. (A, J) HSL, (B, K) ACC, (C, L) CaMKK, (D, M) LKB1, (E, N) Sirt1, (F, O) PKA, (G, P) PPAR, (H, Q) C/EBP and (I, R) C/EBP. White bars represent the control group and black bars represent the amycenone group. The data value is given as means ± S.E.M. (n = 9, 8, respectively), \**P* < 0.05, \*\**P* < 0.01 vs. control group.

**Fig. S4 Signaling related to the inhibition of body weight gain in PAT and MAT of KK-*Ay* mice with normal water or under amycenone treatment (0.76 g/kg body weight/day) for 8 weeks (A), (B).**

**Table S1 mRNA expression levels of lipid metabolism-related genes in PAT of KK-*Ay*mice with normal water or under amycenone treatment (0.76 g/kg body weight/day) for 8 weeks.**

|  |  |  |
| --- | --- | --- |
| Genes | Control (%) | Amycenone (%) |
| *Atgl* | 100.0±1.41 | 93.2±1.58 |
| *Mcad* | 100.0±2.36 | 114.2±0.92 |
| *ap2* | 100.0±0.43 | 153.0±0.51 |
| *Cpt1* | 100.0±1.10 | 1196.3±0.29\* |
| *Adipor1* | 100.0±1.66 | 109.2±0.55 |
| *Adipor2* | 100.0±0.31 | 144.1±0.79 |

Amycenone increased the gene expression level of *Cpt1* in PAT of KK-*Ay* mice. The table shows the genes expression levels of *Atgl*, *Mcad*, *ap2*, *Cpt1*, *Adipor1*, and *Adipor2*. The data value is given as means ± S.E.M. (n = 9, 8, respectively), \**P* < 0.05 vs. control group.