



## Exercise Biochemistry Review

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### **The effects of 4 weeks training mediates apelin on the p-AMPK(Thr172)/AMPK ratio in skeletal muscle of mice**

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**Objective** To investigate the effects of 4 weeks aerobic exercise mediates apelin on the p-AMPK(Thr172)/AMPK ratio in skeletal muscle of mice.

**Methods** The C57BL/6J wild type mice (n=40) were randomly divided into four groups: control group (WC), exercise group (WE), apelin injection control group (AC) and apelin injection exercise group (AE), with 10 mice in each group. Apelin injection group mice were intraperitoneally injected with apelin (0.1  $\mu\text{mol/kg/day}$ ) for 4 weeks. At the same time, the exercise groups mice underwent 60min/day treadmill running with a slope of 5° at the speed of 15m/min for 2 weeks, and the speed was adjusted to 20m/min in the later 2 weeks. 48 h after the final exercise session quadriceps muscles were harvest. The protein expression of apelin, APJ, AMPK $\alpha$  and p-AMPK $\alpha$  (Thr172) in skeletal muscle was determined by Western Blot.

**Results** (1) Compared with WC group, the protein expression of apelin, APJ and p-AMPK $\alpha$  (Thr172)/AMPK $\alpha$  ratio in AC group skeletal muscle of mice were increased;

(2) Compared with WE group, the p-AMPK $\alpha$  (Thr172) / AMPK $\alpha$  ratio in AE group skeletal muscle of mice were increased.

**Conclusions** Apelin supplementation for 4 weeks can up-regulate AMPK protein activity in skeletal muscle both in sedentary group and exercise group.