Biology of Sport

pISSN 0860-021X

» Journal Abstract

Effect of exercise and α-lipoic acid supplementation on oxidative stress in rats

HT Kim, CH Chae

Biol Sport 2006; 23 (2):
ICID: 891376
Article type: Original article
IC™ Value: 9.29

Abstract provided by Publisher

We investigated the effect of exercise (running on a treadmill) and α-lipoic acid supplementation for 6 weeks on body mass; the levels of blood and liver malondialdehyde (MDA), creatine kinase (CK), and lactate dehydrogenase (LDH); and the serum cortisol concentrations in rats. Sprague-Dawley rats were assigned to one of three treatment groups (n=7 per group): (1) α-lipoic acid supplementation only, (2) treadmill exercise only, and (3) α-lipoic acid supplementation and exercise. Controls did not receive α-lipoic acid and did not exercise. DL-α-lipoic acid (100 mg/kg) was supplemented orally daily and rats were exercised 5 days per week for 6 weeks. The exercise regime comprised running on a treadmill at an increasing pace. After 6 weeks, body mass was significantly lower in all three treatment groups compared with controls. Liver MDA concentrations were significantly lower in the α-lipoic acid-supplemented rats, irrespective of whether the rats also exercised, than in rats that only exercised. Blood MDA and CK activities (but not LDH activity or cortisol concentrations) were significantly lower in rats that received α-lipoic acid without exercise. These results suggest that α-lipoic acid supplementation may reduce exercise-induced oxidative tissue damage via antioxidant effects.

ICID 891376

FULL TEXT 292 KB

Related articles

- in IndexCopernicus™
  - Oxidative Stress [952 related records]
  - Membrane damage [0 related records]
  - DL-α-lipoic acid [0 related records]
  - Malondialdehyde [137 related records]

Search

Back