

عنوان مقاله:

The anti-fatigue effects of the hydro-alcoholic extract of Pistacia vera seeds (pistachios) on male Wistar rats

محل انتشار:

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خلاصه مقاله:

Background: Oxidative stress and free radicals play a crucial role in muscle fatigue. Pistacia vera (P. vera) contains many antioxidant substances such as coenzyme Q-10, vitamin E and beta-carotene. The current study has been designed to evaluate the effects of P. vera seeds (pistachios) on skeletal muscle fatigue in male Wistar rats. Materials and methods: 50 Male Wistar rats were randomly divided into five groups, including the normal, vehicle and treated groups of pistachio extracts (10, 100, and 1000 mg/kg). Muscle fatigue was induced by treadmills. Animals would run at the speed of 20 m/min on a treadmill until they showed fatigue signs. This protocol was repeated for 10 days. The hydroalcoholic extracts of pistachios were gavaged 30 minutes before the induction of muscle fatigue every day. On the 11th day, rats were sacrificed and biochemical parameters such as creatine phospho-kinase (CPK), lactate dehydrogenase (LDH) and aspartate aminotransferase (AST) levels were measured in the plasma. Results: The different doses of the pistachio extract led to an increase in the fatigue time on days 2 (100 mg/kg) ($p < 0.05$), 4 (10 and 100 mg/kg) (all $p < 0.05$), 5 (10 and 1000 mg/kg) (all $p < 0.05$), 7 (10 and 1000 mg/kg) (all $p < 0.05$) and 9 (100 mg/kg) ($p < 0.05$). The induction of muscle fatigue led to an increase in the serum activity of CPK, LDH and AST (all $p < 0.01$). The pistachio extract (10 and 100 mg/kg) decreased the serum activities of LDH and AST (all $p < 0.05$). Conclusion: According to the results of this study, it was concluded that pistachios could decrease skeletal muscle fatigue in male Wistar rats.

کلمات کلیدی:

Pistacia vera, Muscle fatigue, Antioxidant, Rat

