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## » Journal Abstract

Effect of anthocyanins from aronia melanocarpa on the exercise-induced oxidative stress in rat tissues

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We investigated the effect of the extract from fruits of *Aronia melanocarpa* (AM), containing the anthocyanin antioxidants on the lipid peroxidation index (TBARS) and the content of reduced glutathione (GSH) in rat tissues at rest and after exercising until exhaustion on a treadmill. For four consecutive days the animals were given AM through a gastric probe at 0.7 mg× kg<sup>-1</sup> body mass (related to the content of the active substance). Control rats received 0.9% NaCl solution. Samples of the liver (L), heart (H), and white (WG) and red (RG) portions of the gastrocnemius muscle were collected from the animals at rest and immediately after the exercise. No effect of AM on TBARS was detected in the resting animals. The exercise, however, led to the significant elevation of the value of this index ( $P < 0.05$ ) in each of the tested tissues obtained from the control animals, and in the liver and heart of the AM-fed rats. The TBARS content in RG was significantly lower ( $P < 0.05$ ) in the latter compared to the former group of the animals. After administration of AM in rest, the GSH content tended to decrease in the examined tissues. Following the exercise, the significant reduction ( $P < 0.05$ ) in the GSH content was detected in all the tested tissues obtained from the control group. In contrast, no effect of the exercise on the GSH content was found in the AM-fed rats. After exercising, the higher GSH content ( $P < 0.05$ ) in the RG and H as well as the tendency to higher GSH content in WG and L were detected in rats given AM as compared to the control animals. The obtained results suggest that administration of AM markedly mitigates the exercise-induced reduction in the GSH content and elevation of TBARS in the tissues of the investigated animals.

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