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THE PROTECTIVE EFFECT OF *ASTRAGALUS ARMATUS* ON CARDIOVASCULAR DISEASES INDUCED BY HYPERHOMOCYSTEINEMIA IN MICE

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ABSTRACT

Our research aims to determine the protective effect of the *Astragalus armatus* extract on plasma homocysteine (Hcy) rate, lipids, antioxidant enzymes and histological abnormalities of aorta and heart, in hyperhomocysteinemia (HHcy) induced by high-methionine died in mice, which is an independent risk factor for cardiovascular diseases. Twenty eight adult male *Mus Musculus* mice were divided into four groups, the control group (F) was fed with white bread, group (M) was fed with L-methionine, group (PM) was fed with L-methionine plus *A. armatus* extract, and the group (P) was treated with *A. armatus* extract. After 21 days of treatments, Hcy concentration, lipid parameters, hepatic antioxidant status and histological sections of aorta and heart were determined. Consumption of high methionine diet resulted in a significant increase in plasma Hcy. Furthermore, we detected an increase in lipid parameters concentrations, and a decrease in HDL-c, glutathione reduced (GSH) and catalase (CAT) activities. These results are associated with the appearance of pathological alterations in the aorta and the heart organs. While the administration of *A. armatus* extract with L-methionine caused: a decrease in Hcy concentration and lipid parameters, an increase in GSH and CAT activities, and an improvement in histological changes. Our data showed that *A. armatus* extract is effective in: decreasing plasma Hcy levels and lipid parameters, reducing oxidative stress by increasing antioxidant status and protecting aorta and heart tissues in mice fed a diet rich in L-methionine.

Keywords: Hyperhomocysteinemia, *Astragalus armatus*, lipids status, Glutathione, Catalase.