Summary of the **MSc** thesis No., **14278**. **.** Clinical Biochemistry**,** Faculty of Veterinary Medicine, Urmia University.

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Title: Galectin-3 and BNP changes as early heart injury markers in mice exposed to BPA

Summary:

Bisphenol A, abbreviated as BPA , is a synthetic organic substance found in plastic containers and cans. BPA shows hormone-like properties and in low doses causes adverse effects on reproduction and regulation of the body's immune system, hormone-dependent cancers and metabolism, it also binds to nuclear receptors and causes disruption of adipogenesis and oxidative stress. and it becomes inflamed. Heart diseases, especially coronary artery diseases, are one of the main causes of death in developed countries. Increased exposure to BPA leads to the occurrence of cardiovascular diseases (CVDs) including myocardial infarction, arrhythmias, cardiomyopathy with heart enlargement, atherosclerosis and hypertension. To carry out this study, 45 mice were selected in the group of chronic contact with BPA . First, BPA was dissolved at 100 mg/ml in absolute ethanol and then diluted 1:100 with ethanol. 0.1 ml of the obtained solution was added to one liter of water and given to mice in water bottles and blood samples were collected at the end of the period. In the acute BPA poisoning group, 55 BPA mice were injected with a dose of 1000 mg per kilogram of body weight in the form of 100 microliters of olive oil intraperitoneally (ip) and at zero, one, two, and six times. Twelve and 24 hours after BPA injection, five mice were selected and euthanized and blood samples were collected. The results of this study showed that exposure of rats to BPA causes cardiovascular toxicity to the heart tissue, increased CK-MB enzyme activity in the serum, increased triglycerides, LDL/HDL and increased lipid peroxidation. According to previous studies and findings from This study, finding the molecular cellular pathways involved in BPA toxicity can provide useful information for a better understanding of the mechanisms of BPA cardiovascular toxicity, identification of the biomarkers involved and the development of interventional measures to reduce BPA cardiovascular toxicity.

Keywords: Bisphenol A, Galectin-3, BNP, Mice, Heart injery