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Study of the Protective Effects of Summer Savory against Multiple Organ Damage Induced by Lead Acetate in Rats

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Abstract : Excessive exposure to heavy metals contributes to the occurrence of deleterious health problems that affect vital organs like the brain, liver, kidneys, and heart. The use of natural products that have antioxidant capabilities may contribute to the protection of these organs. In the present study, the essential oil of summer savory (Satureja hortensis) was used to evaluate its protective effects against lead acetate induced damaging effect on rats' vital organs, due to its high contents of carvacrol, y-terpinene, and p-cymene. Forty female Wister Albino rats were classified into five equal groups, the 1st served as normal group, the 2nd served as positive control group was given lead acetate (60 mg/kg) intra-peritoneal (IP), the third to fifth groups were treated with calcium disodium (EDTA) as chelating agent and summer savory essential oil in doses of (50 and 100mg/kg) respectively. All treatments were given IP concomitant with lead acetate for ten successive days. At the end of the experiment duration electrocardiogram (ECG), an open field test for the evaluation of psychological state, rotarod test as for the evaluation of locomotor coordination ability as well as anti-inflammatory and oxidative stress biomarkers in serum and histopathology of vital organs were performed. The investigations in this study show that the protective effect of high dose of summer savory essential oil is more than the low dose and that the essential oil of summer savory is a promising agent that can contribute to the protection of vital organs against the hazardous damaging effects of lead acetate.

Keywords : brain, heart, kidneys, lead acetate, liver, protective, summer savory
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