

**Department** : Biochemistry  
**Field of study** : Biochemistry  
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**Title of Thesis** : *PROPHYLACTIC ROLE OF SOME MEDICAL HERBS AGAINST GAMMA RADIATION INDUCED BIOCHEMICAL DISTURBANCE IN THE LIVER AND CARDIAC FUNCTIONS OF RATS.*

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**ABSTRACT:** *The objective of this study was to evaluate the ability of ginseng, green tea or/and cinnamon to improve the disturbances occur in liver, heart, lipid and thyroid profiles as well as antioxidant and lipid peroxidation status in rats as a result of exposure to  $\gamma$ -irradiation. The obtained results revealed a significant ( $p<0.05$ ) increase in serum alanine transferase (ALT), aspartate transferase (AST), lactate dehydrogenase (LDH) and creatine kinase (CK) activities as well as elevations in the levels of total cholesterol, triglycerides, high density cholesterol (HDL-Ch) and low density cholesterol (LDL-Ch) in irradiated rats than those in control ones. On the other hand, the concentrations of serum total protein, albumin and free triiodothyronine ( $FT_3$ ) were remarkable decreased in rats as a result of exposure to  $\gamma$ -irradiation. Moreover, as a result of exposure to  $\gamma$ -radiation, the mean value of GSH content and Gpx activity were remarkable decreased in both the liver tissues and in the cardiac tissues of the rats. On the contrary, the exposure to  $\gamma$ -radiation caused a significant ( $P<0.001$ ) increment in thiobarbituric acid reactive substance (TBARS) level in both liver and heart tissues of rats. When  $\gamma$ -irradiated rats groups were treated with ginseng, green tea or cinnamon, considerable amelioration effects in all previous studied parameters were pronounced dependent on time of treatment (15 & 30 days). The maximum correction was occurred in all studied parameters in irradiated-rats treated with mixture of ginseng, green tea and cinnamon dependent on the time of treatment (15 and 30 days). So, this study can practically help to encourage the clinical use of this mixture as a treatment for exposure to  $\gamma$ -radiation. These mechanisms were discussed according to available recent researches.*

**Key words:** *Gamma irradiation, Taurine, Ginseng, Green tea, Cinnamon, Rat*

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