



## Paper # (٦)

### Effect of garlic on toluene-induced biochemical and histopathological effects in albino rats.

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#### Summary:

The present work aims to study the effect of garlic extract on toluene inhalation at very low dose, which induces hematological, biochemical and histological alterations in liver and kidney of albino rats. Animals were divided into four groups. Group ١ (G<sup>١</sup>) served as controls, G<sup>٢</sup> given garlic aqueous extract, G<sup>٣</sup> inhaled toluene vapor and G<sup>٤</sup> given garlic aqueous extract and after a hour they were exposed to inhalation of toluene vapor, according to the doses mentioned in the methodology. Animals were sacrificed after ٢ and ٤ weeks of treatment. The result showed that exposing animals to toluene induce significant decrease in red blood cell count (RBCs), hemoglobin (HGB), and blood platelets (PLT). On the other hand, the hematocrit percentage (HCT) and white blood cells (WBCs) count increased. Moreover, transaminase (ALT and AST) and gamma-glutamyl transferase (GGT) were increased in the sera of treated animals. Histological examination of liver of treated rat showed leukocytic infiltrations congestion of blood vessels, cytoplasmic vacuolations of hepatocytes and fatty degeneration. Treated kidney in rats of G<sup>٣</sup> showed glomerular tufts congestion; renal space narrowing and epithelia of some renal tubules were degenerated with hemorrhage between them. To some extent, an improvement was observed in the kidney of the recovery group. Treating animals with garlic after exposure to toluene caused an improvement in the biochemical and histological alterations in albino rats. It could be concluded that the protective effect of garlic may be attributed to the presence of organosulfur compounds which have antioxidant and detoxifying properties.