

Jordan University of Science and Technology

Increase Hsp90 in Rats? Lungs Exposed to Self-Cure Acrylic Methyl Methacrylate Monomer

Authors: Al-Hourani Zeid A; Bibars Abdel Rahim M; Alfwaress Firas S; Shboul Yasemin A; AlShyyab Awni

Abstract: Introduction: Methyl Methacrylate (MMA) is a clear, highly volatile flammable- liquid monomer, with unpleasant strong fruity odor. It is an ester compound that results from the reaction between methanol and methacrylic acid. Aim: this study aims to investigate the expression of hsp90, a heat shock protein, in lung tissue of rats exposed to MMA, subsequent to the oral administration of MMA monomer in rats. Methods: 20 Sprague-Dawley rats were randomly selected and divided into two groups: control group, and experimental group. The experimental group was orally administered 120 mg/kg of MMA daily 5 times per week for four weeks. Changes in the expression of HSP90 in the lung tissue were investigated using Immunohistochemistry technique. Results: rat in the experimental group showed statistically significant ($p < 0.001$) increase, by approximately 15 folds, in the expression of HSP90 compared to that in the control group. Conclusion: exposure to MMA increased hsp90 expression in rat lungs, which may explain, at least in part, the inflammatory interactions that are associated with exposure to MMA