

Assessment of Cytotoxic and Genotoxic Effect of Tartrazine in Both Male and Female Albino Rats

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Abstract : Objective: This study was carried out to evaluate the cytotoxic and genotoxic effect of tartrazine in both male and female albino rats. Methodology: Forty adult male (20) and female (20) Sprague Dawley albino rats (120 - 150g) were obtained and distributed into four experimental groups; Group I; 10 untreated males, Group II; 10 untreated females, Group III; 10 treated males, and Group IV; 10 treated females. Body weight was recorded weekly, reduced glutathione (RGH), lipid peroxidation (SOD), and superoxide dismutase activity (MDA) in liver tissue were carried out, histopathological studies of brain, liver, and kidneys were performed, COMET assay was performed, all values were statistically analyzed. Results: Decrease in the activity of RGH and SOD in the treated groups were reported, but there was a more significant decrease in the female treated group. MDA was increased in treated groups with tartrazine, moreover, it was more significant in the female treated group. Multiple histological lesions were developed in brain, liver, and kidneys. COMET showed positive results. Conclusion: Our study concluded that Tartrazine has a cytotoxic and genotoxic effect on albino rats and it was more significant in females than males.

Keywords : tartrazine, cytotoxicity, genotoxicity, histopathology, albino rats

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