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Attenuation of Monosodium Glutamate-Induced Hepatic and Testicular Toxicity in Albino Rats by *ANNONA MURICATA* LINN. (ANNONACEAE) LEAF EXTRACT

[1]Eman Mohammed Mohammed Abd-Ella[*], [2]Abd-Elkarim Mohammed Abd-Lateif Mohammed

[*1]Lecturer of histology and cytology, zoology department, Faculty of Science, Fayoum University, Egypt.

[2]Assistant professor of histology and cytology, zoology department, Faculty of Science, Fayoum University, Egypt.

Introduction and aim of the work: The protective effects of *ANNONA MURICATA* LINN leaf extract (Graviola) against orally administered Monosodium glutamate (MSG) for 4 weeks induced hepatic and testicular toxicity on male albino rats were examined. **Methods:** The rats were divided into 4 groups • Group 1: Served as negative control: The rats were daily orally administrated with ml of distilled water for 4 weeks. • Group 2: Served as control Graviola group: The rats were orally administrated with Graviola leaf extract dissolved in distilled water at a dose level of 100 mg/kg body weight for 4 weeks. • Group 3: Served as control mono-sodium glutamate group (MSG): The rats were orally administrated with monosodium glutamate dissolved in distilled water at a dose level of 4mg/kg b.wt, for 4 weeks. • Group 4: served as treatment group: The rats were orally administrated with monosodium glutamate dissolved in distilled water at a dose level of 4mg/kg b.wt, for 4 weeks, then followed by treatment with Graviola leaf extract dissolved in distilled water at a dose level of 100 mg/kg body weight for another 4 successive weeks. Liver and testes were examined for alterations in BCL-2 and Caspase-3 protein expression and histopathology. **Results:** MSG up-regulated BCL-2 and Caspase-3 expression in LIVER AND TESTES where Caspase-3 expression was significantly increased ($p<0.05$) and BCL-2 expression was significantly ($P<0.05$) decreased but *ANNONA MURICATA* LINN leaf extract (Graviola) administration as a therapeutic treatment almost normalized the histological and immunohistochemical alterations. **Conclusion:** present findings confirmed the protective and therapeutic effects of *ANNONA MURICATA* LINN leaf extract (Graviola) on MSG induced alteration in liver and testes in male albino rats.