

Research article

Hesperidin an antioxidant flavonoid prevents carbon tetrachloride-induced hepatic toxicity in male albino rats

Asmaa AbdulazizAhmeedahRabee*, Hassen A. H. Bennisir

Faculty of Pharmacy and Medicine, Omar EL- Mokhtar University, Derna, Libya.

Key words: Hesperidin (HDN), Antioxidants, Hepatic Toxicity, CCl₄.

***Corresponding Author:** Asmaa AbdulazizAhmeedahRabee, Faculty of Pharmacy and Medicine, Omar EL- Mokhtar University, Derna, Libya.

Abstract

Through this research work, an experimental study was conducted to evaluate the protective effects of an antioxidant (Hesperidin) on carbon tetrachloride-induced hepatic toxicity. This effect was evaluated through assessment of liver functions as well as histopathological changes in livers of rats exposed to Hesperidin prior to carbon tetrachloride. Thirty two male albino rats (160-200 gm) were chosen as an animal model for this study and distributed to four equal groups each of 8 rats (Treated for 10 days). After the ten days of treatment, the following were assessed: liver enzymes, tumour necrosis factor –alpha, oxidant parameters as malondialdehyde and antioxidant parameters as glutathione, superoxide dismutase, and total antioxidant capacity. Histopathological examination of the liver tissues was conducted. Hesperidin in the dose of 100 and 200 mg/kg produced a significant decrease in the levels of liver enzymes, alanine aminotransferase (ALT) and aspartate aminotransferase (AST), tumour necrosis factor–alpha(TNF- α), and oxidant parameters as malondialdehyde (MDA). Antioxidant parameters as glutathione (GSH), superoxide dismutase (SOD), and total antioxidant capacity (T-AOC), also have shown significant increase. These findings were confirmatory to histopathology. Hesperidin in a dose of 100 and 200 mg/kg offers significant protection against hepatotoxicity produced by CCl₄ in albino rats, but this protection is dose-dependent.