

## Protective Effect of Hesperidin against Cyclophosphamide Hepatotoxicity in Rats

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**Abstract :** The protective effect of hesperidin was investigated in rats exposed to liver injury induced by a single intraperitoneal injection of cyclophosphamide (CYP) at a dose of 150 mg kg<sup>-1</sup>. Hesperidin treatment (100 mg kg<sup>-1</sup>/day, orally) was applied for seven days, starting five days before CYP administration. Hesperidin significantly decreased the CYP-induced elevations of serum alanine aminotransferase, and hepatic malondialdehyde and myeloperoxidase activity, significantly prevented the depletion of hepatic glutathione peroxidase activity resulted from CYP administration. Also, hesperidin ameliorated the CYP-induced liver tissue injury observed by histopathological examination. In addition, hesperidin decreased the CYP-induced expression of inducible nitric oxide synthase, tumor necrosis factor- $\alpha$ , cyclooxygenase-2, Fas ligand, and caspase-9 in liver tissue. It was concluded that hesperidin may represent a potential candidate to protect against CYP-induced hepatotoxicity.

**Keywords :** hesperidin, cyclophosphamide, liver, rats

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