

## **Evaluation of gastroprotective, hepatoprotective and hypotensive activities of *Ulmus campestris* bark extract**

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### **Abstract**

The present study was conducted to explore the antioxidant, antiulcer, hepatoprotective and vasodilatory effects of *Ulmus campestris* (Ulmaceae) ethanol bark extract at different doses, using several experimental methods. The extract was evaluated for its antioxidant activity different model systems, including hydroxyl and 2,2-diphenyl-1-picrylhydrazyl (DPPH) radicals and linoleic acid. For antiulcer and gastro-protective effects, ethanol- and indometacin-induced gastric damage were used, while for hepatoprotective activity, aluminium- and D-galactose induced hepato-toxicity was examined by histopathological analysis of liver section. The hypotensive effect on the contractile activity was also evaluated on endothelium-intact and endothelium-denuded porcine ring aorta.

The results of the present study revealed a potent antioxidant activity against DPPH ( $IC_{50}=3.90 \mu\text{g/mL}$ ) and  $\text{OH}^-$  ( $IC_{50}=40.13 \mu\text{g/mL}$ ) radicals, lipid peroxidation ( $30.41 \pm 2.53\%$ ) and a significant gastro-protective effect in both ethanol- and indometacin-induced gastric ulcer (90%). The extract also demonstrated a high protection against  $\text{AlCl}_3$ -D-Galactose induced hepatotoxicity. The relaxant effect of extract was endothelium-dependant (109.73%,  $IC_{50}=0.002 \text{ mg/mL}$ ), without any change in eNOS phosphorylation.

The results of the present study indicated that *U. campestris* ethanol bark extract exhibited considerable antioxidant activity and protective effect against gastric ulcer and liver damage, as well as a pronounced endothelium-dependent and NO-independent relaxation in porcine coronary artery.

**Keywords :** *Ulmus campestris* Antiulcer Gastroprotective Hepatoprotective Endothelial function eNOS