

Plant Science

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Anti-ulcer activities of a local plant from Algeria, *Clematis flammula*

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Statement of the Problem: Gastric ulcer is a widely distributed disease characterized by lesions in the gastric mucosa leading to inflammatory condition and an increase in oxidative stress. *Clematis flammula* (Ranunculaceae) is a medicinal plant largely used by rural populations in Algeria to treat inflammatory disorders like rheumatoid arthritis. However, its use against gastric ulcer is limited. The purpose of this study was to examine the gastroprotective effect of the leaves ethanolic extract of *C. flammula* in an animal model.

Methodology & Theoretical Orientation: Gastric ulcer was induced by indomethacin (25mg/kg) in male mice, one hour after the administration of ethanolic extracts of *C. flammula* at different concentrations (25, 50, 100 and 200mg/kg) and the reference drugs misoprostol Omeprazole and Bromazepam. The anti-ulcer activity of the extracts was evaluated by the estimation of the ulcer score (UC), the activities of superoxide dismutase (SOD), catalase (CAT) and glutathione and MDA levels in the tissue homogenates of the stomach. Histological analysis boosted by the extract, mainly at 100 mg/kg from $16.68 \pm 0.96 \mu\text{moles/mg/min}$ in the indomethacin-treated group to 28.99 ± 3.2 comparable to misoprostole ($26.4 \pm 2.49 \mu\text{moles/mg/min}$) administered at 200 $\mu\text{g/Kg}$ misoprostol. The depletion of glutathione level by indomethacin ($2.76 \pm 0.63 \mu\text{moles/mg prot}$) in the ulcerated group was prevented by the pre-treatment with 100mg/kg of *Clematis flammula* leaves extract and was restored to a normal level ($30.95 \pm 2.76 \mu\text{moles/mg prot}$). Histological analysis confirmed the results.

Conclusion & Significance: These results prove that the antioxidant activity of the plant contributes to its gastroprotective potential. was also performed to confirm the results.

Findings: The ethanolic extract at different concentrations (25, 50, 100 and 200mg/kg) as well as misoprostol have activated significantly the SOD from $7.95 \pm 0.65 \text{ U/mg proteins}$ in the group ulcerated by indomethacin to 16.17 ± 1.73 ; 18.05 ± 2.53 ; 19.24 ± 1.87 ; 18.55 ± 1.38 and 20.71 ± 1.79 , respectively. Catalase activity was greatly



Biography

Dina Atmani-Kilani has obtained her BS degree in Biology from the American University of Beirut, Lebanon, her master degree in Biology from Cal State LA, USA and her PhD from the University of Bejaia, Algeria. Her teaching activities in the fields of Molecular Biology and Genetics since 1990 in the University of Bejaia has provided her with a lot of experience. Furthermore, her implication in research in the field of medicinal plants with the collaboration of her colleagues has allowed many PhD students to obtain their degree and resulted in many international publications. As her conviction that medicinal plants research will lead to the development of novel drugs with better efficiency than synthetic medicines, she hopes that her contribution will be fruitful.

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