

## ASSESSMENT OF WOUND HEALING ACTIVITY OF *DAPHNE OLEOIDES* SUBSP. *KURDICA*: IDENTIFICATION OF THE ACTIVE COMPONENTS USING BIOASSAY GUIDED ISOLATION METHOD

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In Turkish traditional medicine, the aerial parts of *Daphne oleoides* Schreber subsp. *kurdica* (DOK) have been used to treat malaria, rheumatism and for wound healing. The aim was to evaluate the ethnopharmacological usage of the plant using *in vivo* and *in vitro* pharmacological experimental models, and to perform bioassay-guided fractionation of the 85% methanolic extract of DOK for the isolation and identification of active wound-healing component (s) and to elucidate possible mechanism of the wound-healing activity. *In vivo* wound-healing activity was evaluated by the linear incision and the circular excision wound models. Anti-inflammatory and antioxidant activities, which are known to support the wound healing process, were also assessed by the Whittle method and the DPPH (2,2-diphenyl-1-picrylhydrazyl) radical-scavenging assays, respectively. The total phenolic content of the extract and subextracts was estimated to establish any correlation between the phenolic content and the antioxidant activity. The methanolic extract of DOK was subjected to various chromatographic separation techniques leading to the isolation and identification of the active component (s). Furthermore, *in vitro* hyaluronidase, collagenase and elastase enzymes inhibitory activity assays were conducted on the active components to explore the activity pathways of the remedy. After

confirmation of the wound-healing activity, the methanolic extract was subjected to successive solvent partitioning using solvents of increasing polarity creating five subextracts. Each subextract was tested on the same biological activity model and the ethyl acetate (EtOAc) subextract had the highest activity. The EtOAc subextract was subjected to further chromatographic separation for the isolation of three components. The structures of these compounds were elucidated as daphnetin, demethyldaphnoretin 7-*O*-glucoside and luteolin 7-*O*-glucoside. Further *in vivo* testing revealed that luteolin 7-*O*-glucoside was shown to have 39.9% increase in tensile strength in linear incision wound model and 61.2% contraction value in circular excision wound model, which were found to be significant when compared to the reference ointment Madecassol. Luteolin 7-*O*-glucoside was also found to exert significant anti-inflammatory, antioxidant, anti-hyaluronidase and anti-collagenase activities. The present study explored the wound-healing potential of *D. oleoides* subsp. *kurdica*. Through bioassay-guided fractionation and isolation techniques, luteolin 7-*O*-glucoside was determined as the main active component of the aerial parts. This compound exerts its activity through inhibition of hyaluronidase and collagenase enzymes activity as well as interfering with the inflammatory stage.

## GASTROPROTECTIVE ACTIVITY OF THE ALCOHOLIC ROOT EXTRACT OF *POTENTILLA FULGENS* WALL.

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*Potentilla fulgens* Wall. (Family: Rosaceae) is a short slender herb commonly found at higher altitudes of the Western Himalayas and is used traditionally for curing gastric problems, diabetes mellitus, pyorrhea and diarrhea. The aim of the present study is to scientifically evaluate the gastroprotective effect of the al-

coholic root extract of (APF) on various experimental gastric ulcer models. The gastroprotective effect of APF graded doses after acute oral toxicity study (100, 200 and 400 mg/kg, po) was studied on four experimental gastric ulcer models viz. pylorus ligation (4h PL), ethanol (95% EtOH, 1h), cold restrain stress (2h