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## The wound healing activity of *Pilosella hoppeana* subsp. *testimonialis* in rats

Nuriye Korkmaz<sup>1</sup>, Sila Ozlem Sener<sup>1</sup>, Seyda Akkaya<sup>1</sup>, Merve Badem<sup>1</sup>, Rezzan Aliyazicioglu<sup>1</sup>, Ebru Ozdemir Nath<sup>2</sup>, Ufuk Ozgen<sup>1</sup>, Tugba Zengin<sup>1</sup>, Engin Yenilmez<sup>1</sup> and Sengul Alpay Karaoglu<sup>3</sup>

<sup>1</sup>Karadeniz Technical University, Turkey

<sup>2</sup>Istanbul Yeni Yüzyıl Üniversitesi, Turkey

<sup>3</sup>Recep Tayyip Erdogan University, Turkey

Traditional uses of plants are guiding the development of new drugs. Determining the biological activity of plants which have been popularly used for many years and the identification of effective compounds in plants are essential factors in drug development. While wound healing is a normal biological process in the human body, non-healing wounds are an important global health care problem. Plants belonging to the family *Asteraceae* exhibit antioxidant, wound healing, antibacterial, antifungal, anti-inflammatory, antitumor, antiseptic effects. *P. hoppeana* is a folk medicinal plant known for its anti-inflammatory potential in Balıkesir for many years. The purpose of the study was to evaluate the wound healing activity of the methanolic extract of *P. hoppeana*, traditionally used in skin diseases, with its biological activity and antimicrobial properties and examine levels of TNF- $\alpha$ , IL-1 $\beta$ , IL-10 and MMP-9 in rat tissues. A circular excision wound was created by excising the skin in the dorsal interscapular region. Animals in the positive and experimental group were topically treated with Madecassol, and pomade prepared from the extract, respectively. At the end of the experiment, biological activity was studied, and PCR analyses were performed on skin samples. The antimicrobial activity of the methanol extract of the plant was also investigated. Rat groups treated with methanol extract and Madecassol exhibited wound contraction compared with the control group. Antioxidant, anti-inflammatory and hydroxyproline values were high in the extract group. Strong antimicrobial activity of the plant was observed. The plant exhibited its wound healing effect by increasing mRNA expression of TNF- $\alpha$ , IL-1 $\beta$ , IL-10 and MMP-9 genes. This study shows that *P. hoppeana* exhibits healing activity in a rat wound model. Considering all these results together, a drug with effective wound healing properties might be developed from the plant.

### Recent Publications

1. Singh H, Ali S S, Khan NA, Mishra A and Mishra A (2017) Wound healing potential of *Cleome viscosa* Linn. seeds extract and isolation of active constituent. South African Journal of Botany 112:460-465.
2. Jaric S, Kostic O, Mataruga Z, Pavlovic D, Pavlovic M, et al. (2017) Traditional wound-healing plants used in the Balkan region (Southeast Europe). J Ethnopharmacol 211:311-328.
3. Bessada S M, Barreira J C and Oliveira M B P (2015) *Asteraceae* species with most prominent bioactivity and their potential applications: A review. Indus Crops Prod 76:604-615.
4. Guo S and Di Pietro L A (2010) Factors affecting wound healing. J Dent Res 89(3):219-229.
5. Picman A K (1986) Biological activities of sesquiterpene lactones. Biochem Systematic and Ecology 14(3):225-281.

### Biography

Nuriye Korkmaz has her expertise in Biochemistry and Phytoteraphy studying enzyme activities, isolations, HPLC analysis, *in vivo* and *in vitro* studies on wound healing and anti obesity mechanisms.

nuriye.dertli@hotmail.com