

Wound Healing and Antioxidant Properties of 80% Methanol Leaf Extract of *Verbascum sinaiticum* (Scrophulariaceae), an Ethiopian Medicinal Plant

Authors : Solomon Assefa Huluka

Abstract : Wounds account for severe morbidity, socioeconomic distress, and mortality around the globe. For several years, various herbal products are used to expedite and augment the innate wound healing process. In Ethiopian folkloric medicine, *Verbascum sinaiticum* L. (*V. sinaiticum*) is commonly applied as a wound-healing agent. The present study investigated the potential wound healing and antioxidant properties of hydroalcoholic leaf extract of *V. sinaiticum*. The 80% methanol extract, formulated as 5% (w/w) and 10% (w/w) ointments, was evaluated in excision and incision wound models using nitrofurazone and simple ointment as positive and negative controls, respectively. Parameters such as wound contraction, period of epithelialization, and tensile strength were determined. Moreover, its *in vitro* antioxidant property was evaluated using a DPPH assay. In the excision model, both doses (5% and 10% w/w) of the extract showed a significant ($p < 0.001$) wound healing efficacy compared to the negative control, as evidenced by enhanced wound contraction rate and shorter epithelialization time records. In the incision model, the lower dose (5% w/w) ointment formulation of the extract exhibited the maximum increment in tensile strength (85.6%) that was significant ($p < 0.001$) compared to negative and untreated controls. Animals treated with 5% w/w ointment, furthermore, showed a significantly ($p < 0.05$) higher percentage of tensile strength than nitrofurazone treated ones. Moreover, the hydroalcoholic extract of the plant showed a noticeable free radical scavenging property. The result of the present study upholds the folkloric use of *V. sinaiticum* in the treatment of wounds.

Keywords : wound healing, antioxidant, excision wound model, incision wound model, *verbascum sinaiticum*

Conference Title : ICTCAMTM 2023 : International Conference on Traditional, Complementary, Alternative Medicines and Treatment Methods

Conference Location : Vancouver, Canada

Conference Dates : May 22-23, 2023