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Evaluating the effect of wound healing and antioxidant property of different extract ointments and trace elements present in *Salix acmophylla* leaves on full thickness excisional skin wounds present in rabbits.

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ABSTRACT

The search for "natural remedies" has drawn attention to herbal drugs and plants in todays world. *Salix acmophylla* leaves have been reported to possess high levels of Proanthocyanidins or condensed tannins which are a group of biologically active polyphenolic bioflavonoids that are synthesized by not only *Salix* spp. but by many plants and also it has been reported that *Salix* spp. contain high level of trace elements mostly zinc and copper. These Proanthocyanidins, tannins, zinc and copper altogether act as antioxidants and facilitate wound healing as these elements are used by the body to make free radical enzyme scavengers, which neutralize the free radicals thus helps in facilitating and inducing VEGF expression, a key element supporting wound angiogenesis. Strategies to manipulate the redox environment in the wound are likely to be of outstanding significance in wound healing process. The four most important enzymes that neutralize the free radicals are the superoxide dismutase (SOD) enzyme, methionine reductase, catalase, and glutathione peroxidase. Thus the present study aimed to estimate the concentration of Catalase (IU/mg of skin tissue) in the skin tissue using spectrophotometer at 240nm and levels of zinc (µg/ml of serum) and copper (µg/ml of serum) using atomic absorption spectroscopy (AAS) method at 213.9nm and 324.8nm respectively in rabbits after creation of excisional full thickness skin wound and post treatment with the 5% ethanolic and 5% aqueous extract ointment group (6 animals each) and comparing the results with the control group (6 animals). The highest concentration of Catalase (CAT) enzyme and trace elements i.e Zinc and Copper was seen in 5% ethanolic extract ointment treated group with the fastest wound closure in 14.50± 0.42 days followed by 5% aqueous extract ointment treated group in 17.16± 0.30 compared to control group 20.16 ± 0.30.

Keywords*: *5% aqueous extract, 5% ethanolic extract, Atomic Absorption Spectroscopy (AAS), Catalase (CAT), Copper (Cu), Polyphenolic bioflavonoids, Proanthocyanidins, Salix acmophylla, Tannins, Vascular endothelial growth factor (VEGF), Wounds, Zinc.