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Evaluation of the wound healing activity of the ethyl acetate fraction of *Artemisia vulgaris* Linn. (Asteraceae)

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Artemisia vulgaris is a plant commonly found in the Philippines that is folklorically used for different ailments. Pharmacological studies have revealed that the methanolic extract of the plant exhibit significant antioxidant, antibacterial, and anti-inflammatory activity, which may contribute to wound healing property. This study aimed to evaluate the pharmacologic use of *Artemisia vulgaris* as a wound healing agent. The powdered leaves of the plant were percolated in 80% methanol and the crude methanolic extract was subjected to fractionation using chloroform, ethyl acetate, and n-butanol as solvents. The presence of tannins in the crude, ethyl acetate, and butanol fractions was confirmed using the ferric chloride test. The total phenolic content (TPC) and total flavonoid content (TFC) of the different fractions were measured using gallic acid and quercetin as standards, respectively. Results showed that ethyl acetate fraction yielded the highest phenol (418.556 mg GAE/g sample) and flavonoid (441.135 mg quercetin equivalent/g sample) content while Chloroform had the lowest phenol content and crude methanolic extract has the lowest flavonoid content. The ethyl acetate fraction was used in the *in vivo* testing and prepared into 25% w/v (Group C) and 50% w/v (Group D) of suspensions using Tween 80 as suspending agent. Wound healing capacity of the plant was assessed in the excision wound model and incision wound mode against 2% Mupirocin ointment (Group B) as standard drug and Distilled water (Group A) as the negative control. In the excision model, percent wound contraction which yielded a statistical difference within the group ($p=0.011$) but no significant statistical difference between groups ($p=0.254$). In the incision model, mean wound breaking strength of Group A (263.133 ± 10.90434), Group B (393.45 ± 11.79477), Group C (311.0333 ± 7.375947), and Group D (300.3333 ± 5.703332). Statistically significant difference on the wound breaking strength was observed among groups ($p<0.001$). The wound breaking strength of Group A was statistically significant with Group B ($p>0.001$), Group C ($p=0.025$), and Group D ($p=0.004$). Group B did not exhibit significant difference between Group C ($p=0.101$) and Group D ($p=0.453$). Group C did not show statistically significant difference with Group D ($p=0.795$). The wound breaking strength of the experimental groups is more likely similar to the positive control rather than the negative control. Histopathological examination was also performed in the incision models. The fibroblast proliferation ($p=0.410$), formation of new capillaries ($p=0.384$), collagen maturation ($p=0.950$) and granuloma tissue formation ($p=0.396$) data between groups did not exhibit statistical difference. Tensile strength and fibroblast proliferation exhibits a strong correlation ($r=0.9137$). There is no sufficient scientific evidence to prove the wound healing activity of *Artemisia vulgaris* based on the parameters observed.

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Spectrophotometric estimation of berberine in *Coptis teeta* Wall

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Coptis teeta Wall. (Family- Ranunculaceae) commonly known as *Mamiran* is an evergreen perennial bog plant and a small stem-less herb. It is one of the age-old rhizomes used in Unani System of Medicine and is of current interest in the present scenario due to composition of various phyto-active constituents as berberine in it. Being of very much therapeutic value of *C. teeta* the drug has been standardized as per WHO guidelines as it is the need of hour to develop methods of standardization of herbal drugs using modern analytical techniques. So, an attempt has been made to develop a colorimetric method for estimation of berberine in *Mamiran*. UV Spectrophotometer method for quantification determination of Berberine in different extract viz. aqueous and ethanolic extract of *Coptis teeta* was developed and validated. The method involves measurement of absorbance of sample solution at the absorption maxima of Berberine (346 nm). The method was validated by determining linearity, precision and accuracy as per ICH guidelines. Berberine obeys the Beer's Law in the concentration range of 0.01 to 0.10 mg/ml. The method proved to be quite accurate with a mean percentage recovery of 99.21 % thus the proposed method is simple, rapid, precise, accurate and suitable for quantification of Berberine content in sample of *Coptis teeta*.

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