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Evaluation of wound healing activity of rhizomes of *Rumex abyssinicus J.* in mice

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Rumex abyssinicus Jacq (Polygonaceae) is widely distributed in the highlands from North Africa to Ethiopia. Traditional healers in Ethiopia use the rhizomes of *R. abyssinicus* ("Mekmeko" in Amharic) combined with other plants to treat wounds and various ailments. Despite some research on the plant, there is no scientific report proving the use of *R. abyssinicus* on wound healing. Thus, the present study have an objective of investigating the wound healing potential of 80% methanolic extract of *R. abyssinicus* rhizomes in mice.

Having been extracted with 80% methanol, the hydroalcoholic extracts were incorporated in simple ointment base B.P. in concentration of 5% (w/w) and 10% (w/w) for wound healing activity study topically in mice using excision and incision wound model. In vivo antiinflammatory activity was studied by dissolving the extract in 1% carboxyl methyl cellulose and giving orally at dose of 250, 500 and 750 mg/kg in carrageenan induced hind paw oedema model.

Wound treated with ointment containing 5% and 10% (w/w) hydroalcoholic extract in the two experimental model exhibited significant wound healing activity ($p < 0.05-0.001$) compared to control as evidenced by increased wound contraction rate, shorter epithelization time, higher skin breaking strength and increased hydroxyproline content. 10% (w/w) hydroalcoholic extract ointment effect was comparable to that of the reference standard (nitrofurazone). *R. abyssinicus* rhizomes hydroalcoholic extract also produced dose-related significant reductions ($p < 0.05-0.001$) of inflammation as compared to control.

The results of this study demonstrated that the hydroalcoholic extract of the rhizomes of *R. abyssinicus* facilitated wound healing at least in part via its antiinflammatory activity, supporting its traditional claim as wound healing agent.

Biography

Eshetu Mulisa has completed his B Pharm at the age of 23 years in 2009 from University of Gonder and MSc in Pharmacology at the age of 25 years in 2011 from Addis Abeba University. He is the coordinator of Pharmacology and Toxicology course team at Jimma University.

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