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Research Article

Wound Healing Property of *Anona squamosa* Leaf Extract

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Abstract

Evaluation: Wound healing property of methanolic extract of leaf of *Annona squamosa* was evaluated.

Material and methods: *Annona squamosa* leaves and albino mice were used in the study.

Results: The *Annona squamosa* leaf extract is having very good wound healing property.

Conclusion: These results suggested that *Annona squamosa* leaf extract could be utilized for wound healing.

Keywords: *Annona squamosa; Leaf extract; Wound healing property*

Introduction

Annona squamosa Linn. also known as Sitaphala, Custard-Apple, belongs to the family Annonaceae. *Annona squamosa* Linn. is a large evergreen, straggling shrub or small tree, 7m in height, introduced into India, found wild and cultivated in various parts, up to an altitude of 900m. The plant is widely cultivated throughout India as an ornamental plant and deciduous tree. Leaves are reported to possess anti-oxidant [1], antispasmodic, sudorific, anthelmintic insecticidal properties. The poultice of the leaves is used as a cataplasm over boils and ulcers to induce suppuration. It also relieves pain and swellings. The extracts with acid, ether and acetate buffer have shown antibacterial activity against *Micrococcus pyogenes var.aureus* [2]. The present study investigates the wound healing nature of the methanolic extract of leaf of *Annona squamosa* Linn in albino mice.

Materials and Methods

Fourteen apparently healthy albino mice were procured from Small Animal Breeding Station (SABS), COVAS and Mannuthy and divided into two groups. Each group containing six mice and marked as test and control. Two mice were kept as untreated. Wound was produced on skin of abdominal area by dry heat on all groups. Methanolic extract of *Anona squamosa* leaf extract was applied to the treatment group while control group was treated with white soft paraffin. The untreated group was neither applied with leaf extract nor soft paraffin. Rate of tissue healing was observed visually.

Plant material and solvent extraction

The leaves of *Annona squamosa* were collected. The leaves are shade dried pulverized and 100g of powder was macerated with 70% ethanol in dark and filtered to harvest a viscous supernatant. This supernatant was concentrated using rotary vaccum flash evaporator then collected, weighed and kept at refrigeration temperature.

Observation

Group	Number	Treatment
I	6	*Annona squamosa*
II	6	White soft Paraffin
III	2	Untreated

Table 1: *Table showing number of animals in each group.*

Group I, II and III with 6, 6 and 2 mice respectively. Wound was created in all animals and group I was treated with methanolic extract of *Annona squamosa* leaf. Group II was treated with paraffin; where as other two was kept as control.

Results

It was observed that the rate of healing was faster in group I and characterized by much more granulation tissue formation over the wound than control and untreated group. Healing is started by formation of reddish granulation tissue initially later it healed rapidly. The formation of granulation tissue was very slow in other groups.

TEST ***STANDARD*** ***CONTROL***

Figure 1: *Pictures of wound in each group after treatment.*

Discussion

Herbal medicine is a triumph of popular therapeutic diversity. Almost in all the traditional medicine, the medicinal plants play the major role and constitute the backbone for the same. In order to make sure the safe use of these medicines, necessary first step is to establish the standards of quality, safety and efficacy. Keeping these facts into consideration, attempts were made to establish pharmacognostic standards of the plant leaf. Leaf extract of *Annona squamosa* promotes wound healing by increasing the quantity of antioxidants in wound tissues [3]. Alcoholic extract of *A. squamosa* leaf was very useful in amelioration of diabetic wound in rats [4]. Presence of large amount of bioactive principles like alkaloids, flavonoids in *A. squamosa* and the well-known antioxidant property helped the wounds to heal significantly faster in treated animals than the untreated [5]. *A. squamosa* leaves possess variety of antioxidants like total phenolic compounds, considered as a major contributor for their antioxidant and antibacterial properties [6].

The present study clearly indicated that the topical application of methanolic extract of *A. squamosa* promotes levels of enzymatic and non-enzymatic antioxidants in wound tissues, thus detoxifying free radicals to promote better wound healing in mice.

Conclusion

We have shown that the wound healing efficacy of *A. squamosa* leaf extract in skin of mice was successful. Methanolic extract *A. squamosa* promotes levels of enzymatic and non-enzymatic antioxidants in wound tissues, thus detoxifying free radicals to promote better wound healing in mice. The above results suggest that *Annona squamosa* leaf extract could be utilized for wound healing.

Bibliography

1. Mariod AA., *et al.* "Antioxidant activity of different parts from *Annona squamosa*, and *Catunaregam nilotica* methanolic extract". *Acta scientiarum polonorum. Technologia alimentaria* 11.3 (2012): 249-257.
2. El-Chaghaby GA., *et al.* "Evaluation of antioxidant and antibacterial properties of various solvents extracts of *Annona squamosa* L leaves". *Arabian Journal of Chemistry* 7.2 (2014): 227-233.
3. Gupta A., *et al.* "Antioxidant status during cutaneous wound healing in immunocompromised rats". *Molecular and Cellular Biochemistry* 241.1-2 (2002): 1-7.
4. Thangavel Ponrasu *et al.* "Role of *Annona squamosa* on antioxidants during wound healing in streptozotocin-nicotinamide induced diabetic rats". *Journal of Pharmacognosy and Phytochemistry* 2.4 (2013): 77-84.
5. Shenoy C., *et al.* "Antibacterial and wound healing activity of the leaves of *Annona squamosa* Linn. (Annonaceae)". *Research Journal of Pharmacognosy and Phytochemistry* 1.1 (2009): 44-50.
6. Baskar R., *et al.* "*In vitro* antioxidant studies in leaves of *Annona* species". *Indian Journal of Experimental Biology* 45 (2007): 480-485.

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