

ISSN: 18119700

[View references \(58\)](#)

DOI: 10.3923/ijb.2010.69.80

Document Type: Article

Source Type: Journal

[View at publisher](#)

Plectranthus tenuiflorus (Shara) promotes wound healing: In vitro and in vivo studies

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Abstract

The present study proved that both *Plectranthus tenuiflorus* juice and essential oil exerted a healing promoting effect in rat wound model. The effect was shown to be mainly via their ability to stimulate fibroblasts proliferation in addition to an anti-bacterial effect of its thymol content. Leaves of the plant were collected from different regions. The whole leave juice or essential oil were extracted by chemical steam distillation method. Different concentrations were tested for their effects on the proliferation of human foreskin fibroblasts in tissue culture. Its efficiency in enhancing wound healing processes using excision wound model in rat was also designed. The results revealed complete wound healing (100% contraction) at day 14 (10% juice), day 17 (80% juice) and day 18 (10% essential oil) compared to 22 days. Histological studies showed that at day 14 complete epithelization, well formed small sized scar tissue and reappearance of cutaneous appendages were evident in wounds painted with 10% essential oil, followed by 80% juice. In vitro study proved a stimulatory effect of plant extracts on human fibroblasts which may explain the speeding of healing process. The healing promoting effect of *P. tenuiflorus* may be attributed to the high content of calcium (903.16333 ± 0.21); zinc (0.37933 ± 0.05). Essential amino acids (Ala, Leu, Glu, Asp, Asn, Phe and His) seemed also to have a role. On the other hand, thymol was known to have an anti-bacterial effect. Thymol found in this study to be the main component (82.16%) of *P. tenuiflorus* extracts. © 2010 Asian Network for Scientific Information.

Language of original document

English

Author keywords

Essential oil; Leaves juice; *Plectranthus tenuiflorus*; Whole extract; Wound healing

Index Keywords

Species Index: Bacteria (microorganisms); *Plectranthus*; *Rattus*References (58) [View in table layout](#)