

Phytochemical composition of *Plectranthus tenuiflorus* extract and study some of its medical applications

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Abstract

The fresh leaf of *Plectranthus tenuiflorus* (Lamiaceae) was collected from Taif in Saudi Arabia and brought under quantitative and qualitative estimation for metallic elements. The fresh leaf was crushed to analyze the obtained juice for some chemical constituents by way of phytochemistry. The findings revealed the existence of whole carbohydrates at a concentration of 5.98×10^{-5} M of total leaf components. Paper chromatography separation proved that leaf contain 7 protein amino acids represented by Ala; His; Phe; Asn; Asp; Glu and Leu. The descriptive tests showed the presence of coumarins, hydrolysable tannins, essential oil, being thymol (62.53%) the major component in the oil and triterpenoids and in the contrast the absence of alkaloids, steroids, anthraquinones, flavonoides, condensed tannins, cardiac- and anthraquinone glycosides. These phytochemical results were compared with other of *Euryops arabicus* (Soam) and *Clutia myricoides* (Soa'bor).

The study evaluated in vitro antimicrobial and fibroblast proliferation activities of this plant material with in vivo study of its efficiency on enhancing wound healing process in Wister rats. The juice showed inhibitory effect limited to growth of *S. pyogenes* (17.8 mm) and *P. aeruginosa* (17 mm) by agar diffusion method. The percentage of *P. aeruginosa* radial growth inhibition under leaf juice effect indicated medial activity of this plant material.

The juice caused a significant dose- and time-related catalyzing of fibroblasts proliferation (0.1% w/v after 72 hrs), IC₅₀ appeared after 24 hrs at 0.5% (w/v) of the juice.

The results clearly substantiate the beneficial effects of *P. tenuiflorus* juice in accelerating wounds healing at 10% (w/v) concentration through daily and topical application to the wound area compared to the control group and other concentrations and extracts used in earlier studies, where the healing process took 14 days with appearance of hair follicles and sebaceous glands at the whole wound area, including the scar, and looking very close the way it is in normal skin. Consequently, this plant is a promising source of a natural wound healer.

References

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