

**Ministry of Higher Education
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College of Dentistry**



**The evaluation of the effect of topical
application of pomegranate / aloe vera on
wound healing of buccal mucosa**

**(Histological and Immunohistochemical Study using FGF-
b on Rats)**

A Thesis

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Abstract

Background

Wound healing is a complex dynamical interaction between various cell types, the extra cellular matrix (ECM), cytokines, and growth factors. Pomegranate is a widely used plant having medicinal properties. Researches indicate that pomegranate and their extract may serve as natural alternatives because of their potency against a wide range of bacterial and viral pathogens. Methanol extract of the fruit especially the peel exhibit the broadest antibacterial activity

Studies on Aloe vera have proved the antiseptic, anti inflammatory, antiviral and antifungal properties and the use of this plant is proved beneficial. This plant is proved to be non allergic and very good in building up the immune system.

Aims of study

- 1- Evaluate the effect of pomegranate /Aloe vera on acceleration of wound healing process in buccal mucosa .
- 2-Immunohistochemical evaluation of expression of (Fibroblast growth factor-basic) in the studied groups.

Materials and methods

Sixty adult male Wistar rats weighting an average of (250-300gm) used in this study, incisional wounds were made on buccal mucosa of each animal and they were divided into the following groups:

A-Control group: 15 rats which left without application of any material.

Experimental groups:

B-Include 15 rats, which received Pomegranate.

C- Include 15 rats, which received Aloe vera.

D- Include 15 rats, which received a combination of Pomegranate and Aloe vera.

The sacrifice of animals were made for the healing intervals (3,7and 10days) Histological and immunohistochemical analysis of the wound healing was performed on all animal specimens for all healing periods.

Results: Histological analysis revealed that pomegranate and aloe vera accelerate wound healing of oral mucosa and there was highly significant difference among studied groups regarding mean values of epithelial cell count in different durations, while it was highly significant at 10 days for connective tissue cells.

High significant difference of immunohistochemical localization for fibroblast growth factor-basic among the groups was detected by epithelial cells at 7 and 10 days and by connective cells cells at 3days .

Conclusion: When a mixture of both Aloe vera and Pomegranate was applied, it was more effective in accelerating the healing process of oral mucosa.