

**Ministry of Higher Education
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College of Dentistry**



Histological Evaluation of the effect of Local exogenous application of Krill oil/Osteopontin on cutaneous facial wound healing in Rats

A Thesis

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Abstract

Background

Wound healing is a complex dynamical interaction between various cell types, the extracellular matrix, cytokines, and growth factors. Osteopontin and Krill oil are a rarely used materials having medicinal properties with wound healing. Researches indicate that Krill oil is act as anti-inflammatory, antioxidant and renew tissues, and Osteopontin is act a anti-inflammatory.

Aims of study

The study was designed to identify the role of local exogenous applications of Osteopontin / Krill oil on wound healing in the skin cheek of the rats.

Materials and methods

Sixty adult male albino rats weighting an average of (250-300gm) used in this study, incisional wound of full skin thickness were made on cheek of animal with 2cm thickness and then the animals were divided in to the following groups:

A-Control group: 15 rats the wound incision were left treated with distal water.

B-Experimental groups:

- **Group I Contains (15) rats**, the wound incision were treated with topical application 1µl/gm B.W. of krill oil.
- **Group II Contains (15) rats**, the wound incision were treated with topical application 1µl/gm B.W. of osteopontin.

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- **Group III Contains (15) rats**, the wound incision were treated with topical application 1µl/gm B.W. combination of (krill oil and osteopontin).

The scarification of animals were done for the healing intervals (1,5and 10days) Histological finding and inflammatory cells, epidermis thickness, then wound contraction measurement where done by ruler technique for all wound incision in this study, were performed on all animals specimens for all healing periods.

Results:

Histological analysis revealed that osteopontin and Krill oil accelerate wound healing of cheek skin. there were highly significant difference among studied groups, in mean values of epithelial thickness, inflammatory cell count and in contraction of wound area with high significant different especially in 5, 10 days durations in experimental groups then control group.

Conclusion:

The study demonstrated that topical of application of krill oil and osteopontin could be an effective therapy for skin wound healing, this data may be promising for a possible future clinical usage.