

## Effectiveness of *Opuntia Ficus Indica* Cladodes Extract for Wound-Healing

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**Abstract :** Cladode chemical composition may vary according to soil factors, cultivation season, and plant age. The primary metabolites of cladodes are water, carbohydrates, and proteins. The carbohydrates in cladodes are divided into two types: structural and storage. Polysaccharides from *Opuntia ficus-indica* (L.) Mill plants build molecular networks with the capacity to retain water, thus they act as mucoprotective agents. Mucilage is the main polysaccharide of cladodes; it contains polymers of  $\beta$ -d-galacturonic acid bound in positions (1-4) and traces of R-linked l-rhamnose (1-2). Mucilage regulates both the cell water content during prolonged drought and the calcium flux in the plant cells. The in vitro analysis of keratinocytes in monolayer, through the scratch-wound-healing assay, provided promising results. After 48 hours of exposure, the wound scratch was almost completely closed in cells treated with cladode extract. After 72 hours, the treated cells have reached complete confluence, while in the untreated cells, the confluence was reached after 96 hours.

**Keywords :** cladodes, metabolites, polysaccharide, scratch-wound-healing assay

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