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Abstract

In vitro wound healing activity of luteolin

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Background and objectives: Luteolin (3′,4′,5,7-tetrahydroxy flavone) is one of the most common flavones, which is naturally found in several edible plants and traditional medicine. It is known as a non-toxic compound with anti-inflammatory, antinociceptive, anticarcinogenic, antimutagenic, and antiangiogenic properties. Luteolin has antiproliferative activity against different human hormone dependent cancer cells *e.g.* breast, prostate, and thyroid. Due to its bacteriostatic properties and strong antioxidant potential, luteolin is valuable in the management of diverse diseases including peptic ulcers. There are some evidences on wound healing effect of luteolin on diabetic rats and in this work, an *in vitro* model of wound healing was used to study the wound healing effect of luteolin. **Methods:** Different concentrations of luteolin were applied in MTT and scratch assay on 3T3 fibroblast cells. FBS-free medium was used as the negative control. Cell proliferation and migration during scratch contraction was calculated. Annexin V and cell cycle analyses were performed to study the effect of luteolin on cell proliferation. **Result:** The results showed that, scratch contraction was observed significantly (p<0.01) in luteolin treated groups in comparison to control. Luteolin significantly increased the live population of 3T3 cells (98.9±4.9) and population of cells in G2M phase (32.2±1.6) of cell cycle compared to the control group. **Conclusion:** Our findings suggested that fibroblast cell proliferation and migration is a reason for wound healing property of luteolin.

Keywords: luteoline, scratch assay, wound healing

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