



## ***WOUND HEALING ACTIVITY OF ETHANOLIC EXTRACT OF BARK OF PLUMBAGO ZEYLANICA***

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In tribal areas, different crude drug extracts are used to treat various skin disorders including wounds. Wound healing process involves several steps, which involves coagulation, formation of granulation tissue, collagenation and acquisition of wound strength. During the formation of new tissue, endothelial cells proliferate and form new blood vessels. The present study was undertaken to evaluate the wound healing activity of ethanolic extract of *Plumbago zeylanica* bark. The influence of bark of *Plumbago zeylanica* was studied for its wound healing activity at a dose of 250mg/kg body weight, using excision and dead space wound models in rats. The animals were divided into three groups in excision wound model the controls were treated with 0.25% carboxy methyl cellulose (CMC), reference standard group rats were treated with sulphathiazole ointment and the experimental were treated with extract of *Plumbago zeylanica* bark till complete epithelialization. Each group comprised of six rats. The animals in dead space wound models were divided into two groups and controls were given plain drinking water and the experimental animals were administered with extract orally for 10 days. Ethical clearance was taken before performing experiments and all experiments were conducted in accordance with Institutional Animal Care and Use Committee (IACUC) guidelines. The extract treated wound was found to epithelize faster as compared to controls. Extract treated rats exhibited 66% reduction in the wound area when compared to control (55%). The wet and dry granulation tissue weight and hydroxyproline contents in a dead space wound model increased significantly ( $P \leq 0.001$ ) when compared to controls. Histological studies of the tissue obtained on day 10 from the extract -treated group showed increased well organized bands of collagen, more fibroblasts and few inflammatory cells when compared to controls which showed inflammatory cells, scanty collagen fibers and fibroblasts. The demonstration of increased rate of wound contraction together with the biochemical and histological findings suggest the use of *Plumbago zeylanica* bark extract in the management of wound healing.

**Keywords:** *Ethanolic extract, Hydroxyprolin, Plumbago zeylanica, Sulphathiazole, Wound healing.*