

## Conclusion

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- The pharmacognostical evaluation performed in the present study provides various qualitative and quantitative standards for root tuber from *Leea macrophylla* which will benefit interested researchers as a referential source of valuable information that will certify their identity and authenticity.
- The study depicted a potent *in vitro* antioxidant activity of *Leea macrophylla* extract, its sub-fractions.
- The extract of *Leea macrophylla* was standardized with chlorogenic acid by HPLC for the first time and the content of chlorogenic acid was obtained as 9.01% w/w.
- Both oral and topical route were selected as administrative means for the wound healing study using excision and incision wound model. For topical treatment bioadhesive gel was formulated and characterized for mechanical and physical characteristics by texture profile analysis and scanning electron microscopy (SEM).
- The wound healing potential was demonstrated by significant increase in antioxidants glutathione, superoxide dismutase and catalase whereas level of enzymes lipid peroxidation and nitric oxide and inflammatory markers myeloperoxidase were reduced. Further advantageous effects were reflected by significantly increased levels of hydroxyproline, hexosamine and hexuronic acid. Favourable effects on level of proinflammatory cytokines interleukin-1 $\beta$  (IL-1 $\beta$ ), interleukin -6 (IL-6), tumor necrosis factor -  $\alpha$  (TNF- $\alpha$ ) and growth factor, vascular endothelial growth factor (VEGF) were also observed .Wound healing potential of *Leea macrophylla* was further supported by its ability to promote cell

proliferation during wound healing as demonstrated by Western blot analysis of proliferation marker Ki-67.

- They antioxidant status and potential antibacterial activity may have an additional advantage in treatment of wound.
- The study justifies traditional use of *Leea macrophylla* in wound healing and demonstrates that the bioadhesive gel of ethanolic extract produced faster and more significant healing as compared to oral treatment.