

Formulation and Characterization of Poly Herbal Cream with Wound Healing Activity

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Abstract: The herbal cream formulations were designed by using ethenolic extracts of *Argemone mexicana*, *Cassia tora*, *Evolvulus alsinoides*, *Ocimum centum*, *Curcumis sativus*. The ethanolic extracts of herbs were incorporated in a cream base i.e. prepared by a phase inversion emulsification technique. Therefore, an attempt has been made in this study to combine these herbs in an herbal cream to determine the synergistic effects of *Argemone mexicana L.* for wound healing activity on excision wound model.

Physicochemical assessments, microbiological testing, skin sensitivity test using open patch were performed for all formulations according to the Indian Standard Bureau. Excision wound measuring about 177 mm² was created on the albino rats placed in groups (n=5) and the ointment applied topically on the wounded area which was measured at intervals of 3 days until epithelialization and complete wound closure.

The formulations show all the physicochemical parameters in the range of 5.84-6.23 pH, 6.0-6.29±1.0 acid values, 15.1-18.9±1.3 Saponification value, 95-97±0.1 % spreadability, 95.9-98.1±1.3% thermal stability and 23-36±4 CFU g⁻¹ microbial count.

Application of the herbal cream formulation containing the *Argemone mexicana L.* extract (1.0 g/100g ointment) produced the highest rate of wound healing, reducing the epithelialization period to 14.9 days compared to the control formulation treatment with epithelialization period of 18.3 days.

Therefore, it can be concluded that the formulating *A. maxicana L.* extracts (0.1g/100g of cream base) into an herbal cream is most effective and safer usage in wound repairs process.

Keywords: Emulsification technique, Indian Standard Bureau, Excision wound, *Argemone mexicana*

