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DESIGN AND DEVELOPMENT OF A POLYHERBAL TOPICAL FORMULATION FOR WOUND CARE APPLICATIONS

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ABSTRACT

The current invention pertains to polyherbal topical formulation and the process of its preparation as an agent used to treat wounds. It also includes extracts of *Centella asiatica* (Vallari) and *Calendula officinalis*, which have been chosen due to their complementary action in stimulating tissue regeneration, decreasing inflammation, and controlling the oxidative stress. It is aimed at developing a safe, cost-effective, and multifunctional herbal wound care system. Plant materials are hydroalcoholically extracted to produce a semi-solid extract which is subsequently incorporated into a base that is pharmaceutically acceptable e.g. a cream or gel. The formulation will be used to improve wound healing through the maintenance of a moist environment, stability, and patient acceptability. Early physicochemical and physical analyses, such as appearance, homogeneity, PH, viscosity, spreadability and extrudability were conducted to ascertain its topical application. The phytochemical screening showed that triterpenoids, flavonoids, and phenolic compounds were present and these ones are associated with therapeutic effect in wound healing. Formulation quality was evaluated based on the standard guidelines so as to achieve consistency. The formulation also displayed a high in-vitro antioxidant activity meaning that it can be used to control oxidative stress in wounds. The batch-to-batch reproducibility is guaranteed by analytical standardization by chromatographic methods like HPTLC. Altogether, the invention provides a scalable and environmentally friendly methodology to address effective polyherbal topical formulations to be used as wound care and in dermatology.

KEY WORDS : *Centella asiatica*; *Calendula officinalis*; Wound healing; Antioxidant activity;