




Advanced drug delivery systems containing herbal components for wound healing

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Abstract

Management of chronic wound has an immense impact on social and economic conditions in the world. Healthcare costs, aging population, physical trauma, and comorbidities of diabetes and obesity seem to be the major factors of this increasing incidence of chronic wounds. Conditions of chronic wound could not restore functional epidermis; thus, delaying the closure of the wound opening in an expected manner. Failures in restoration of skin integrity delay healing due to changes in skin pathology, such as chronic ulceration or nonhealing. The role of different traditional medicines has been explored for use in the healing of cutaneous wounds, where several phytochemicals, such as flavonoids, alkaloids, phenolic acids, tannins are known to provide potential wound healing properties. However, the delivery of plant-based therapeutics could be improved by the novel platform of nanotechnology. Thus, the objectives of novel delivery strategies of principal bioactive from plant sources are to accelerate the wound healing process, avoid wound complications and enhance patient compliance. Therefore, the opportunities of nanotechnology-based drug delivery of natural wound healing therapeutics have been included in the present discussion with special emphasis on nanofibers, vesicular structures, nanoparticles, nanoemulsion, and nanogels.