

## عنوان مقاله:

Development of eucalyptol enriched nano vesicles for better transdermal delivery of curcumin: Preparation, characterisation and ex vivo skin analysis

## محل انتشار:

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## خلاصه مقاله:

Objective(s): Invasomes are nano-sized vesicular systems made of ethanol, soybean phosphatidylcholine and terpenes that promote skin penetration by disrupting the lipoidal structure of stratum corneum, interacting with the matrix proteins and augmenting the partitioning of the drug moiety in the skin layer. Curcumin is a well-known bright yellow coloured polyphenol which is produced by the plants of curcuma long class belonging to family Zingiberaceae. It is being used in the therapeutic field since ancient times for the treatment of several diseases. It is a complex molecule with substantial activity against a number of ailments. Despite having a number of health benefits, curcumin's limited water solubility and poor skin penetration are the major barriers in its transdermal application. Materials and Methods: In present research work, terpenoid invasomal nano vesicles of curcumin were prepared using mechanical dispersion process with eucalyptol as the permeation enhancer. The prepared invasomal formulations were characterised and optimised in terms of entrapment efficiency, vesicle size, in vitro drug release, ex vivo permeation and skin retention analysis. Results: The transmission electron microscope confirmed the presence of spherical-shaped vesicles with a vesicle size of  $461.57 \pm 1.38$  nm and  $80.54 \pm 0.38$  % entrapment efficiency. In vitro release kinetics conformed well with Higuchi kinetic model for release. Ex vivo study confirmed that the curcumin permeation across the pig ear skin from the optimised formulation was 2.5 times higher than curcumin solution and had a flux of  $179.44 \pm 0.26$   $\mu\text{g}/\text{cm}^2/\text{h}$ . Conclusion: The study suggests that invasomes have a high potential for .transdermal administration of curcumin which can increase the topical utility of curcumin in several skin diseases

## کلمات کلیدی:

Invasomes, Permeation enhancer, Skin, Terpene

## لینک ثابت مقاله در پایگاه سیویلیکا:

