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## Microscopic evaluation of novel topical formulation for treatment of arthritis

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Due to the lower risk of systemic side effects, topical treatment of skin disease appears favorable, yet the stratum corneum counteracts the penetration of xenobiotics into viable skin. Fatty acids have been widely used as adjuvant, vehicles in drug delivery viz. penetration enhancers in topical delivery and in polymeric micelles to provide sustained release. However, the present investigation aims at exploring the potential of fatty acid vesicles for the topical delivery of Disease modifying Anti-rheumatic drugs (DMRD'S). Vesicles were prepared by film hydration method using oleic acid as a fatty acid principal component. Developed vesicles were characterized for size, size distribution, shape, *In vitro* release, pH dependent and storage stability, skin and ex-vivo skin permeation. Optical microscopy and TEM studies confirmed vesicular dispersion of fatty acid. Ex-vivo skin permeation and Confocal microscopic (CLSM) studies suggested that oleic acid vesicles penetrate the stratum corneum and retain the drug accumulated in the epidermal part of the skin. On the basis of sustained release behavior and skin retention it can be inferred that oleic acid vesicles can serve as a potential carrier for the topical localized delivery of bioactives.

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