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Novel Vesicular Approach For Topical Delivery of Baclofen Via Niosomes

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SUMMARY. Niosomes have been reported as a possible approach to improve the low skin penetration and bioavailability characteristics shown by conventional topical vehicle for Baclofen (centrally acting skeletal muscle relaxant). Niosomes were prepared by lipid film hydration method using non ionic surfactant (Span 20) and cholesterol in varying molar ratios such as 1:1, 1:2 and 2:1. The prepared systems were characterized for vesicle surface morphology, entrapment efficiency, Osmotic fragility and stability studies. The *in vitro* drug release behavior was determined by an in-house fabricated dissolution-dialysis apparatus. The skeletal muscle relaxant activity was determined by rota rod method using Swiss albino mice. The average particle size of niosomes was in the range of 3260-3810 nm. The maximum percent drug entrapment was observed with span 20 (89.67 ± 0.46 %). Furthermore, the release profile of baclofen from these niosomes was 68.15 ± 1.7 % (maximum). The formulations kept for stability studies have exhibited percent drug entrapment value of 87.93 ± 0.34 % under refrigerated milieu (4 ± 2 °C). The mice treated with formulations have shown improved muscle relaxation activity which was evident by increased number of falls in rota rod test as compared to plane drug treated mice (p value = 0.001).

KEY WORDS: Niosomes, Transdermal drug delivery, Rota rod method.

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