



Formulation Vitamin C Using Niosomes System Span 80 In Gel For Increase Stability And Penetration In Vitro

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Abstract: The purpose of this research is to create drug delivery systems that may improve stability and penetration of Vitamin C by the system niosomes Span 80.

Methods: Span 80 was varied in three concentrations, the formula I (100 mol), formula II (200 mol) and formula III (300 mol). Niosomes manufacture is done using classic methods Hydration Thin Layer. Tests performed include testing the efficiency of entrapment, niosomes morphological observation, stability test and diffusion test *in vitro*. The entrapment efficiency testing was conducted using a dialysis membrane. Niosomes formulated in a gel preparation by using gel base of 8 % HPMC and for the a comparison gel formulation of vitamin C without niosomes was used. Niosomes morphological observation was performed using a light microscope. Test of preparation stability included organoleptic observation, pH testing, and the assay. Diffusion test in vitro used *Franz* diffusion cells.

Results: The results showed the most optimum entrapment efficiency Span 80 concentration was optimum formula I (100 mol) of $99,1243\% \pm 0,0255$. The formed niosomes had measurement of 0,3 to 4 μ m. The stability test results for 28 days demonstrated that niosomes gel dosage vitamin C had better stability compared to gel dosage of vitamin C in which the gel niosomes vitamin C had higher levels of $82,7716\% \pm 5,1312$ while the gel vitamin C had higher levels of $71,8330\% \pm 3,0261$. Diffusion test results for 8 hours showed that there was no significant difference between niosomes gel dosage of vitamin C.

Conclusion: The system niosomes Span 80 which can increase the stability of vitamin C.

Keywords: Vitamin C, niosomes, span 80, stability and penetration.