ABSTRACT

UJI STABILITAS FISIK TERHADAP KARAKTERISTIKFISIK *NANOSTRUCTURED LIPID CARRIERS* (NLC) KOENZIM Q10

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Coenzyme Q10 is a crystalline powder that is insoluble in water but soluble in fat and found in several parts of eukaryotic cells, especially mitochondria. Coenzyme Q10 functions as an antioxidant which is can help prevent collagen damage and increase elastin production process to avoid wrinkles. Coenzyme Q10 has poor penetration, susceptible to degradation and unstable when exposed to light. A delivery system is needed to increases stability and penetration, one of which is Nanostructured Lipid Carriers (NLC). Nanostructured Lipid Carriers (NLC) is a nanostructured lipid deliverysystem that combines solid and liquid lipid matrices, which are stabilized with surfactants, thereby increasing penetration. In this study, the solid lipid used was Cetyl Palmitate with a formula of 3 different concentrations, namely; F1 (10%), F2 (11%), F3(12%), while the liquid lipid used is Caprylic, with the active ingredient coenzyme Q10.The finished NLC preparation is stored for 24 hours to carry out physical characteristic tests which include organileptic tests, homogeneity tests, pH tests and spreadability tests. Physical stability was tested using 3 methods, namely; Centrifugation Method, Heat-Shock Method, and Freeze-Thaw Method. In the spreadability test after the freeze thaw test, results were obtained that were significantly different, namely F1 (10%) and F2 (11%), this happened because the concentration of solid lipids was too small. For data processing the normality test uses the Shapiro-Wilk test, the homogeneity test uses Levene, while the average differences use Tukey.

Keywords: *Coenzyme Q10, Nanostructured Lipid Carrier (NLC), Physical Stability, SPSS Data.*