

ABSTRACT

EFFECT OF PALMITIC ACID COMPOSITION ON PHYSICAL CHARACTERISTICS OF NANOSTRUCTURED LIPID CARRIER (NLC) KOENZIM Q10

Ika Desi Rahmawati

Coenzyme Q10 is an antioxidant compound that functions as an antiaging agent with a fairly large molecular weight of 863.36 g/mol and is lipophilic. Coenzyme Q10 is a chemical compound that is unstable and easily degraded, so a delivery system that can improve the stability of Coenzyme Q10 is needed, namely a Nanostructured Lipid Carrier (NLC). The purpose of this study was to determine the effect of solid lipid composition (palmitic acid) on the physical characteristics of NLC Coenzyme Q10. This research was conducted on 3 NLC formulas, namely F1, F2, and F3. The research method was carried out experimentally using a high shear homogenizer, ultra-turax. Evaluation of physical characteristics was carried out after 24 hours of preparation. Observations made included organoleptic, homogeneity, pH, and dispersibility. The research data was statistically processed using the one-way Anova test. The results of organoleptic and homogeneity research on F1, F2, and F3 obtained a semisolid form, yellow in color, odorless, and homogeneous. In the pH test, the results were F1 5.49; F2 5.47; and F3 5.41. The results showed that the concentration of solid lipids had no effect on pH, with no significant difference in the results of the pH test ($p \geq 0.05$). In the dispersion test, the F1 results were 7.8 cm; F2 7.4 cm; and F3 5.5 cm. The results showed that the concentration of solid lipids had an effect on dispersion (F1 and F2) with significantly different results ($p \leq 0.05$).

Keyword : Coenzyme Q10, Nanostructured Lipid Carrier, Palmitic Acid