

ABSTRACT

EFFECT OF MYRISTIC ACID CONCENTRATION ON POTENTIAL ZETA OF NANOSTRUCTURED LIPID CARRIERS (NLC) COENZIM Q10

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Coenzyme Q10 is a natural antioxidant that is unstable and easily degraded when exposed to light, so it is necessary to choose a delivery system that can improve the stability of coenzyme Q10, extend the effective time and deliver coenzyme Q10 to penetrate the stratum corneum and achieve defense. Coenzyme Q10 can be formulated in Nanostructured Lipid Carrier (NLC) preparations, by combining solid lipids (Myristic acid), liquid lipids (Caprylic) which are stabilized by surfactants (Span 80 and Tween 80) and co-surfactants (Propylenglykol)

This study aims to determine the effect of variations in the concentration of solid lipids (Myristic Acid) on the zeta potential of Coenzyme Q10 Nanostructured Lipid Carrier (NLC) preparations. The concentration of myristic acid used was 10% (F1), 11% (F2), and 12% (F3). Each formula was replicated 3 times and then a potential zeta value test was carried out on each preparation. This testing process was carried out after 24 hours of the process of making Coenzyme Q10 Nanostructured Lipid Carrier (NLC).

The results of the zeta potential values showed $F1 = |-36.49| mV$, $F2 = |-34.53| mV$ and $F3 = |-32.23| mV$. The research data were processed statistically using the One Way ANOVA test, with a significant p-value resulting of 0.001 (significant p-value < 0.05) which could mean that the potential zeta value of the Nanostructured Lipid Carrier (NLC) Coenzyme Q10 is affected by myristic acid. F1 is the best formula, because the resulting zeta potential value is the highest compared to the other formulas. The higher the value of the zeta potential, the greater the repulsive force between the particles. It is recommended that a more complete viscosity test be carried out on the Coenzyme Q10 Nanostructured Lipid Carrier (NLC) preparation to find out whether or not the carrier and active substance enter the skin when applied, and there is a need for more detailed stability testing regarding each preparation which is then can be developed into products that can be distribute.

Keywords : *Coenzyme Q10, Myristic Acid, Zeta potential, NLC*