

ABSTRACT

THE EFFECT OF *RICE BRAN OIL (Oryza Sativa)* COMPOSITION ON POTENTIAL ZETA OF COENZYME Q10 NANOPARTICLES CREAM

Rizka Aprilya

Coenzyme Q10 is a natural fat-soluble compound that has effectiveness as anti-aging, but coenzyme Q10 has a large molecular weight of 836.36 g/mol and low solubility in water so that it has low penetration on the skin. Coenzyme Q10 is formulated as a nanoparticle cream preparation to improve the solubility of the active substance and increase penetration in the skin. This study aims to determine the difference in the effect of Rice Bran Oil concentration on the physical characteristics of the zeta potential of the cream preparation of coenzyme Q10 nanoparticles. This research was made in 3 formulas with variations in the concentration of Rice Bran Oil F1 (1%), F2 (2%), and F3 (3%). Evaluation of the physical characteristics of the zeta potential was carried out after 24 hours after the preparation was completed. The results of the research on the zeta potential of each formula were in accordance with the specifications, which were in the range of ± 20 mV to ± 30 mV. The average zeta potential value for the preparation of coenzyme Q10 nanoparticle cream for F1, F2, F2, respectively, was -26.06 mV; -22.80 mV and -20.41 mV. The research data was statistically processed using One Way ANOVA analysis. The results showed that the concentration of liquid lipid variation of Rice Bran Oil had an effect on the physical characteristics of the zeta potential of the preparation of coenzyme Q10 nanoparticle cream with a significant difference of $p < 0.05$.

Keywords : *Rice Bran Oil, nanoparticle, potential zeta*