

ABSTRACT

EFFECT OF PALMITIC ACID CONCENTRATION ON THE PHYSICAL STABILITY OF NANOSTRUCTURED LIPID CARRIERS (NLC) COENZYME Q10

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Skin aging is a process of progressive decline in skin function and capacity. There are two factors that play a role in skin aging, namely intrinsic and extrinsic factors. Intrinsic aging is an inevitable process and in this process the skin experiences morphological and physiological changes such as thinning of the skin, fine wrinkles, dry skin, sagging skin, and benign skin tumors. While extrinsic aging is a supporting factor that will accelerate the emergence of these intrinsic factors. The role of these extrinsic factors comes from outside the body, exposure to ultraviolet radiation from the sun is the main supporting factor for extrinsic aging. In extrinsic aging, the skin experiences deep wrinkles, loss of elasticity, and the skin surface becomes rough, there are deep wrinkles, loose skin, rough skin. If these extrinsic factors occur, it will cause an increase in free radicals in the body. To minimize skin damage due to free radicals, it is necessary to use anti-aging products that contain antioxidants. One of the antioxidants to counteract free radicals is coenzyme Q10. In this study, Nanostructured Lipid Carriers (NLC) preparations will be made with the active ingredient Coenzyme Q10. NLC preparation requires solid and liquid lipids. The use of palmitic acid as a solid lipid is expected to produce good physical characteristics of NLC preparation. Palmitic acid is needed with 3 different concentrations for each formula, namely F1 2.5%; F2 3.5%; 4.5%. The preparation will go through organoleptic, homogeneity, pH and spreadability tests. The results of all formulas produce good organoleptic and homogeneity.

Keywords: *Skin aging, Coenzyme q10, Palmitic acid concentration, Physical stability of nanostructured lipids carriers*