



Preparation of Spray Nanoemulsion and Cream Containing Vitamin E as Anti-Aging Product Tested in Vitro and in Vivo Method

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Abstract : Skin is a layer covering body and protect body from negative effect and environment factor. Some studies indicated that aging resulted by sun-light exposure and many other factors including free radical. Thus, it requires anti-aging product capable to resist and even to repair any disorder in skin caused by free radical. One of anti-oxidant required in one's body is vitamin E (*tocopherol*). The objective of this study was to formulate special preparation in spray nanoemulsion and cream containing vitamin E as *anti-aging* tested *in vitro* and *in vivo* method. This experiment used vitamin E (*alfa tocopherol*) as anti-aging component function and compare effectiveness of anti-aging made in preparation of spray nano-emulsion and cream containing vitamin E. Testing on preparation of spray nanoemulsion and cream vitamin E on skin and effectiveness anti-aging using skin analyzer applied on skin back of hand. Treatment took for 12 weeks using/applying each preparation twice daily. Parameters tested included moisture, avenges, pore and total spot.

The result showed that vitamin E can be formulated in spray nanoemulsion and cream containing vitamin E with homogenous outcome, no irritation, pH ranged 6.7-7.16, stable during storage for 12 weeks, spray nanoemulsion has nanoparticle sized of 186,26-338,93 nm, spray nanoemulsion also had been shown penetrating into skin better than any preparation in cream and preparation spray nano-emulsion capable to show its effectiveness as a *anti-aging* product after treatment for 12 weeks than a preparation in cream. The results of this study suggest and indicated that be higher concentration of vitamin E and be smaller particle size it may produce effectiveness excellent as anti-aging.

Keyword : *aging, spray nanoemulsion, cream, vitamin E.*

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