

ABSTRACT**Effectiveness Ubiquinone (Q10) Nanoemulsion as Delivery Systems
Compared with Emulsion as Anti-Aging Cosmetics
(using Olive Oil as Oil Phase)****Fani Deapsari**

Ubiquinone (Q10) is an endogenous antioxidant. It is lipophilic and practically insoluble in water. To improve its solubility and penetration, it was formulated into O/W nanoemulsion. The resulting Q10 nanoemulsion was then physically characterized for its viscosity, surface tension, morphology, droplet size, and polydispersity index. In addition, it was conducted a penetration test of Q10 and effectiveness Q10 as anti aging in nanoemulsion delivery system compared to Q10 in emulsion using male Wistar rats. From the characterization results, that the viscosity of Q10 nanoemulsion (10.5 CPas) < Q10 emulsion (16 CPas), the morphology of droplet Q10 nanoemulsion and Q10 emulsion that are spherical, and it was found that the droplet size of Q10 nanoemulsion ($70.07 \pm 12.42 \text{ nm}$) < Q10 emulsion ($21.063 \pm 3,57\mu\text{m}$), The penetration rate of Q10 in nanoemulsion and emulsion was observed at 2 hours, 4 hours, and 6 hours after treatment. The result was known that the penetration rate of Q10 in nanoemulsion ($174.49 \mu\text{m/h}$) > Q10 in emulsion ($20.429 \mu\text{m/h}$). Effectivness as anti aging using the number of fibroblast and collagen density. The number of fibroblasts were obtained in Q10 nanoemulsion ($39 \pm 6,04$) > Q10 emulsion ($23 \pm 2,07$). Collagen density test results on Q10 nanoemulsi (1.8 ± 0.44)> Q10 emulsion (1.6 ± 0.54).

Keywords : Q10, nanoemulsion, emulsion, olive oil, penetration, anti aging, fibroblast