ABSTRACT

IN SILICO AND IN VIVO STUDIES OF EFFECTIVENESS OF COENZYM Q10 AS ANTI-AGING IN SOLID LIPID NANOPARTICLE (SLN)

The skin is the most important part of the body. Aging is a process of physiological degeneration caused by a decrease in the ability and function of the inherent tissue with increasing age (Yu and Scott, 2010). To overcome this problem antioxidants are needed, one example of an endogenous antioxidant that is often used is coenzyme Q10. Coenzyme Q10 is a fat-soluble natural cofactor and has strong antioxidant activity and has an activity as an anti-aging agent. However, coenzyme Q10 has characteristics that cause penetration into the skin is low, so it needs to be formulated with the right delivery system. After formulation, testing is carried out in vivo.Experimental research in the laboratory (wet lab) requires a lot of time, effort, and cost. While in silico research (dry lab) can minimize these things. However, there are no studies that prove that there is a correlation between the in silico test and in vivo.The purpose of this study is to prove that there is a correlation between the in silico test and in vivo. To prove this, a penetration test was carried out on the back skin of mice and molecular docking at Molegro, then the two results were carried out using the Pearson correlation test.The experiment was carried out in silico with molegro and in vivo. The results obtained in this study are that there is a correlation between the in silico test and the in vivo test.

Keywords: coenzyme Q10, in silico, in vivo, solid lipid nanoparticle, SLN, penetration, molegro, docking

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