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Irritation Test of Seaweeds (*Eucheuma cottonii*. Doty) Powder Cream Formulation as Sunscreen *In Vivo*

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ABSTRACT

Over sunlight exposure in long periods may cause skin damage, premature aging, and skin cancer possibilities. Sunscreen can protect the skin from the negative effects of sunlight, it can reduce the negative effect of UV radiation. The objective of this research is to make sunscreen cream from seaweed powder *Eucheuma cotoni*. Doty by reducing the particle dimension, irritation test and set SPF value in an in vivo way. This research begins with the milling and seaving of seaweed particles through the process of cutting and grinding using a ball mill. Produced seaweed powder with size nano micrometer, and its characterized the particle size, polydispersity index, and morphology of the particles. The particle size is 532,73 ± 34,28 nm, and the polydispersity index is 0,29 ± 0,07. Formulation using water-in-oil base cream consisted of cetomacrogol 1000, propylene glycol, VCO, and cetostearyl alcohol. Cream evaluation included organoleptic, pH, viscosity, irritation test and determine SPF value *in vivo*. Based of the result evaluation, the formula cream consisting of 1% cetomacrogol 1000, 15% propylene glycol, 56% VCO and 3% cetostearyl alcohol was recommended. The result of the skin irritation test on the rabbit's back skin was negative. In the first step SPF value was determined by Minimal Erythema Dose (MED). The minimal erythema dose (MED) that could cause erythema in albino rabbits of New Zealand strain 1,494 J/cm^2. The SPF value of the *in vivo* test is 3,36.

Keywords: Seaweed powder, water in oil base cream, sunscreen, skin irritation test, SPF