

## Research on *Curcuma Xanthorrhiza* Roxb. Extract\*) for Cosmetic Use

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### ABSTRACT

The demand for naturally derived active ingredient for cosmetic is increasing. The objective is to search for anti acne and anti oxidative agent from Indonesian botanical resources for cosmetic use. This presentation describes a natural ingredient extracted with ethanol from *Curcuma xanthorrhiza*. For study on the use in cosmetic, *Curcuma* extract was dissolved in Propylene Glycol (ECCX\*) and its physicochemical properties and stability are then measured. The study was carried out using DPPH scavenging activity for antioxidant property and Kirby-Bauer method for anti acne activity. In addition, we conducted also studies on its safety aspects including HET-CAM. The safety test were conducted using Repeated Opened Patch Test (ROPT) followed by Single Closed Patch Test (SCPT), involving more than 50 selected healthy volunteers. The results showed that the anti oxidation activities (DPPH scavenging activity) of the ECCX\* has the potency of 52.0% - 80.6% at the concentration of 2.5% - 7.5% respectively compared to ascorbic acid, as the reference substance. However, it has no significant inhibition on the growth of *Propionibacterium acne*, *Staphylococcus aureus* and *Staphylococcus epidermidis*. From the ROPT and SCPT, it was shown that ECCX\* did not cause irritation nor allergic skin reaction more than its safety requirement. HET-CAM test revealed that ECCX\* is moderately irritant to eyes at the concentration of 2.5%. Thus, this extract is dermatologically safe for antioxidative agent but not as anti acne in cosmetic use.

**Key words:** *Curcuma xanthorrhiza*, antioxidant activity, anti acne, cosmetic

\*) = Patent pending