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Formulation and Evaluation of Toothpaste Contained Green Tea (*Camellia sinensis* L.) and Tangerine Peel Extracts (*Citrus reticulata* Blanco.)

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ABSTRACT

Dental caries is one disease that occurs both in children and adults. One of the dental caries pathogenic microbial found in cariogenic biofilm or plaques is *Streptococcus mutans*. Natural material is one of the alternatives which can be used to treat the disease, some of them are green tea and tangerine peel. Both contain antibacterial active components against the *Streptococcus mutans*. This research used the ethanol extract of green tea and tangerine peel. Activity tests of both extracts showed inhibition on *Streptococcus mutans* and *Porphyromonas Gingivalis* 1.6%; 3.25% and 6.4% by green extract and 20%, 25%, and 30% by tangerine peel. The goal of the research was to formulate the extract of ethanol of green tea and tangerine peel into pharmaceutically stable toothpaste. Toothpaste is a semisolid disperse system preparations that contain amounts of insoluble solid. One of the functions of toothpaste is to clean the teeth. A physical stability test was done to obtain the most optimum preparations. Formulation and evaluation of physical properties including organoleptic, homogeneity, pH measurement, viscosity, foam height, and spreadability. Optimation base result showed that 1% Na CMC is the most stable in consistency. The formulation then continued with formulation into preparations and carried out the stability test and physical evaluations. Based on storage condition and physical test results showed that the preparations were stable pharmaceutically.

Keywords: Green tea leaves, tangerine peel, toothpaste, Na CMC