

MIC AND MBC OF MANGOSTEEN PERICARP EXTRACT AGAINST *Porphyromonas gingivalis* BIOFILM

ABSTRACT

Background. In primary tooth root canal infections, the most common bacteria are obligate anaerobic gram-negative, one of which is *Porphyromonas gingivalis*. It is necessary to discover another antibacterial agent as an irrigation material in root canal preparation deriving from nature. Mangosteen (*Gracinia mangostana*) is a fruit that originated from Southeast Asia, especially Indonesia. The pericarp has antibacterial potency because there are some active substances, such as xanthone, flavonoid, and tannin. **Purpose.** The aim of this study was to find out the MIC (Minimum Inhibitory Concentration) and MBC (Minimum Bactericidal Concentration) of mangosteen pericarp extract against *Porphyromonas gingivalis* biofilm. **Method.** This research is a laboratory experimental with post test only control group design. *Porphyromonas gingivalis* ATCC 33277 was diluted according to Mc. Farland standard $1,5 \times 10^8$ CFU/mL in Tryptic Soy Broth (TSB) medium and inserted into microtitterplate flexible U bottom. Incubated for 6x24 hour and checked with a simple staining to see the formation of biofilm. Mangosteen pericarp extract was added in various concentrations and grown on Tryptic Soy Agar (TSA) medium with drop plate method. Growth of bacterial colonies in TSA medium was calculated manually in colony forming unit (CFU). **Result.** At the concentration of 25% mangosteen pericarp extracts, showed that colony's growth less than positive group. At the concentration 50% was not revealed any bacterial growth. **Conclusion.** The mangosteen pericarp extract has antibacterial effect on biofilm of *Porphyromonas gingivalis*. The MIC was at 25% and the MBC was at 50%

Keywords: Mangosteen pericarp extract, Biofilm, *Porphyromonas gingivalis*, MIC, MBC.

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