ABSTRACT

The Difference of Antibiofilm Activity of Mangosteen Pericarp Extract 25% and NaOCl 2.5% against Porphyromonas gingivalis Biofilm

***Background**: The use of antibiofilm agent as root canal irrigation were needed to eliminate microorganism in biofilms form. One of microorganisms that were able to form biofilm on the root canal is Porphyromonas gingivalis. NaOCl is an irrigation material that is considered the most effective and popular to remove biofilm formation. Extract of pericarp mangosteen had known have active material such as xanthone, saponin, flavonoid and tannin that can remove biofilm.* ***Purpose**: The aim of this study is to determine the difference of antibiofilm activity between pericarp of mangosteen in concentration 25% and NaOCl 2.5% against Porphyromonas gingivalis biofilm.* ***Method**: Porphyromonas gingivalis ATCC 33277 were incubated for 16 x 24 hours in 37ºC in Tripticase Soy Broth (TSB). The bacteria were then grown as a biofilm on a 96 well microtitter plate. The extract of pericarp mangosteen 25% and NaOCl 2.5% were added to each wells and incubated for 24 hours. Semiquantative determine of biofilm formation was performed by washing the plates, staining at adherent cells with crystal violet and measuring the light absorbance of the adherent stained cells at 565 nm using a microplate reader.* ***Results**: The extract of pericarp mangosteen have ability to remove biofilm with optical density value 0.151. in other hand, NaOCl have false negative value with optical density value 0.368 that higher than control 0.190 but when it's confirmed by colony forming unit method, it showed that the plate was sterile from bacteria.* ***Conclusion**: There are differences of antibiofilm effect between extract of pericarp mangosteen 25% and NaOCl 2.5% against Porphyromonas gingivalis biofilm. The extract of pericarp mangosteen 25% have greater antibiofilm effect than NaOCl 2.5%.*

Keywords : antibiofilm, NaOCl, mangosteen pericarp extract, Porphyromonas gingivalis