ABSTRACT

Background: The microbial populations involved in dental caries are known to be highly complex and variable. Dentinal caries can affect the vitality of dental pulp. Dental caries needs a restoration therapy. Imperfection of cleaning carious dentin when preparation was done can multiply bacteria in the cavity. It is necessary to discover another antibacterial agent as cavity cleanser in carious dentin preparation deriving from nature. Xanthone contained in mangosteen pericarp extract is known has an antibacterial potency. Purpose. The aim of this study is to determine Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration) of xanthone from mangosteen pericarp extract on carious dentine. Method. This research is laboratory experimental with post-test only control group design. Xanthone was extracted by ethanol 96% on maceration technique and diluted into several concentrations in Brain Hearth Infusion Broth (BHIB). Direct contact method between various concentration and bacteria was used. Every reaction tube then incubated for 24 hours. After being incubated, each concentration was taken and streaked into Nutrient Agar medium in petridish. Then, every petridish was incubated for another 24 hours and colonies growth was counted manually in Colony Forming Unit (CFU). Result. Bacterial colonies growth at concentration 1.56% is less than 10% when compared with positive control group and there are no bacterial colonies growth at concentration 3.12%. Conclusion. Xanthone of mangosteen pericarp extract has an antibacterial effect against bacteria of carious dentin bacteria. The MIC of xanthone of mangosteen pericarp extract against bacteria of carious dentine was at 1.56% and MBC was at 3.12% concentration.

Keywords: Antibacteria, Xanthone, Mangosteen pericarp extract, carious dentine bacteria