

ABSTRACT

Staphylococcus aureus has developed resistance to many antimicrobials due to indiscriminate use. In 2017 it was found that cases at Dr Soetomo Hospital Surabaya contained antibiotic-resistant patients every day. Resistance to antibiotics, phagocytosis and immunocompetent cells is one of the virulence factors of *Staphylococcus aureus* which associated with biofilm formation. Mangosteen peel contains several compounds that act as biofilm inhibitors. This study aims to test the antibiofilm activity of ethanol extract of mangosteen peel against *Staphylococcus aureus* and to find a new class of inhibitors for the growth of biofilm-forming bacteria from natural ingredients. This study used Tissue Culture Plate method. Bacterial suspension was added with a variation of mangosteen peel ethanol extract into a microtiter plate flat bottom 96 wells. Optical density of the biofilm barrier was read on ELISA Reader at 595 nm. The location and time of the research was carried out at RUMAT for diabetic wounds, FKH Laboratory of Airlangga University and Professor Nidom Foundation Laboratory in December 2021-March 2022. The results showed that mangosteen peel ethanol extract had an inhibitory effect on clinical isolates of *Staphylococcus aureus* and *Staphylococcus aureus* ATCC 25923. The results of Kruskal-Wallis test were $p=0.014$ and $p=0.005$ ($p<0.05$), which means there are differences significant between groups of variables. The Post Hoc Mann Whitney U Test, the two samples obtained that several extract concentrations were significantly different from other extract concentrations ($p < 0.05$), and difference but not significant between extract concentrations and positive control ($p > 0.05$). The results of this study indicate that the mangosteen peel extract has an MBIC of 0.125 mg/mL in both samples.

Keywords: Mangosteen peel extract, biofilm, *Staphylococcus aureus*