POTENTIAL OF RED ONION PEEL ETHANOL EXTRACT (Allium cepa L.) TO DEGRADATION OF Staphylococcus aureus BIOFILM

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Author Order	1 of 5
Accreditation	
Abstract	Dental biofilm is a bacterial colonization adhering to the tooth surface, enveloped by an extracellular matrix. This biofilm shields bacteria from the body's defense and antibacterial systems, potentially leading to various dental and oral diseases.Staphylococcus aureus is among the bacteria forming dental biofilm. Red onion peel is known to contain flavonoids, saponins, tannins, steroids and alkaloids which have antibacterial and anti-biofilm activity. This study aimed to determine the potential of shallot peel extract in degrading S. aureus biofilms. This study was conducted with a posttest-only control group design. Red onion peel extraction is carried out using the maceration method. A total of 5 groups of extracts (50%, 25%, 12.5%, 6.25%, and 3.12%), positive control (chlorhexidine gluconate 0.2%), and negative control (DMSO 1%) were tested for their activity in S. aureus biofilm degradation at 24 and 48 hours of incubation. The biofilm degradation was assessed using the microtiter plate assay method with crystal violet staining read at a wavelength of 595 nm. Percent biofilm degradation was statistically analyzed using Two way ANOVA and LSD. The results indicated significant differences based on treatment, incubation time, and the interaction between the two. The highest activity was observed at a concentration of 25%, although it was still lower than that of positive control. Conclusion: the ethanol extract of red onion peel has the potential to degrade S. aureus biofilms, with the highest activity at a concentration of 25% and an incubation time of 48 hours.
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