INTISARI

Streptococcus sanguinis adalah bakteri Gram positif yang berperan penting dalam pembentukan awal biofilm. Nangka mengandung saponin, flavonoid, dan tannin yang memiliki efek antibakteri dan antibiofilm. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak daun terhadap destruksi biofilm *S. sanguinis* ATCC 10556.

Uji destruksi biofilm menggunakan metode *microtiter plate*. Biofilm dibuat dengan menginkubasi suspensi *S. sanguinis* dengan BHI-B selama 24 jam. Setelah biofilm terbentuk, variasi konsentrasi ekstrak (6,25%, 3,13%, 1,56%, 0,78%), klorheksidin glukonat 0,2% (kontrol positif), dan akuades (kontrol negatif) ditambahkan ke dalam *plate*. Setelah 24 jam inkubasi, biofilm diwarnai menggunakan kristal violet 0,2%. *Optical density* dibaca menggunakan *microplate reader* (λ =450 nm).

Uji *one-way*-ANOVA menujukkan perbedaan persentase destruksi biofilm yang signifikan ($p<0,05$) antar kelompok, hal ini menujukkan bahwa ekstrak daun nangka dapat mendestruksi biofilm *S. sanguinis*. Uji Post-hoc *Least Significant Difference* menunjukkan bahwa terdapat perbedaan bermakna ($p<0,05$) pada kelompok ekstrak 6,25% jika dibandingkan dengan ekstrak daun nangka konsentrasi 3,13%, 1,56%, dan 0,78%. Disimpulkan bahwa ekstrak daun nangka memilik kemampuan destruksi biofilm *S. sanguinis* ATCC 10556 dan konsentrasi 6,25% merupakan konsentrasi ekstrak daun nangka yang paling efektif dalam mendestruksi biofilm *S. sanguinis* ATCC 10556, namun kurang efektif jika dibandingkan dengan klorheksidin glukonat 0,2%.

Kata kunci: Ekstrak daun nangka, destruksi biofilm, *Streptococcus sanguinis*.

ABSTRACT

Streptococcus sanguinis is a Gram-positive bacteria that plays an important role in the initial formation of biofilm. Jackfruit contains saponins, flavonoids, and tannins which have antibacterial and antibiofilm effects. This research aimed to study the effect of jackfruit leaves extract in *S. sanguinis* ATCC 10556 biofilm destruction.

The biofilm destruction assay used the microtiter plate method. Biofilm was prepared by incubating *S. sanguinis* suspension with BHI-B at 37ºC for 24 hours. After the biofilm formed, various concentrations of extract (6.25%, 3.13%, 1.56%, and 0.78%), 0.2% chlorhexidine gluconate (positive control), and aquadest (negative control) were added to the wells. After 24 hours of incubation, the biofilm was then stained using 0.2% crystal violet. The optical density was read using a microplate reader (λ =450 nm).

One-way ANOVA test showed a statistically significant difference in the percentage of biofilm destruction ($p<0.05$) among groups, indicating that jackfruit leaves extract can destruct the biofilm of *S. sanguinis*. The Post-hoc Least Significant Difference test showed that there was a significant difference in the 6.25% extract group ($p<0.05$) when compared to jackfruit leaves extract with concentrations of 3.13%, 1.56%, and 0.78%. It was concluded that jackfruit leaves extract has the capability to destruct *S. sanguinis* ATCC 10556 biofilm and 6.25% was the most effective concentration of jackfruit leaves extract in destructing the *S. sanguinis* ATCC 10556 biofilm, but less effective when compared to 0.2% chlorhexidine gluconate.

Keywords: Jackfruit leaves extract, biofilm destruction, *Streptococcus sanguinis*