INTISARI

Bakteri *Streptococcus sanguinis* adalah bakteri pionir yang berkoloni pada permukaan gigi, membantu perlekatan dengan bakteri lainnya sehingga mengawali pembentukan plak gigi. Daun binahong memiliki sifat antibakteri karena memiliki senyawa aktif flavonoid, alkaloid, terpenoid, tanin, dan saponin. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh ekstrak daun binahong dalam menghambat pembentukan biofilm bakteri *S. sanguinis* ATCC 10556.

Uji penghambatan pembentukan biofilm *S. sanguinis* ATCC 10556 dilakukan pada *96-well microplate*. Media BHI-B dan suspensi bakteri dimasukkan ke dalam masing-masing sumuran kemudian ditambahkan ekstrak daun binahong konsentrasi 2,5%, 5%, 10%, *chlorhexidine gluconate* 0,1% sebagai kontrol positif, dan akuades sebagai kontrol negatif. Replikasi dilakukan sebanyak 6 kali pada *96-well microplate. Microplate* diinkubasi pada suhu 37°C selama 24 jam, dibilas menggunakan *phosphate buffer saline*, dan diwarnai dengan *crystal violet* 0,1%. Pembacaan hasil uji penghambatan pembentukan biofilm menggunakan *microplate reader* dengan panjang gelombang 450 nm.

Hasil uji *One Way* ANOVA menunjukkan bahwa terdapat perbedaan bermakna antar kelompok uji terhadap penghambatan pembentukan biofilm *S. sanguinis* ATCC 10556. Uji *Post-Hoc Least Significant Difference* (LSD) menunjukkan adanya perbedaan bermakna antara ekstrak daun binahong konsentrasi 2,5%, 5%, 10%, dan *chlorhexidine gluconate* 0,1%. Kesimpulan penelitian ini adalah ekstrak daun binahong konsentrasi 10% memiliki kemampuan tertinggi dibandingkan konsentrasi lainnya dalam menghambat pembentukan biofilm *S. sanguinis* ATCC 10556 namun efektifitasnya lebih rendah dibandingkan dengan *chlorhexidine gluconate* 0,1%.

Kata kunci: *Streptococcus sanguinis*, ekstrak daun binahong, penghambatan pembentukan biofilm.

ABSTRACT

Streptococcus sanguinis bacteria are pioneer bacteria that colonize the surface of the teeth, helping to attach to other bacteria, thus initiating the formation of dental plaque. Binahong leaves *(Anredera cordifolia (Tenore) Steenis)* have antibacterial properties because they contain active compounds of flavonoids, alkaloids, terpenoids, tannins and saponins. The aim of this study was to determine the effect of binahong leaf extract in inhibiting on *S. sanguinis* ATCC 10556 biofilm formation.

The inhibition test for *S. sanguinis* ATCC 10556 biofilm formation was carried out on 96-well microplates. BHI-B media and bacterial suspension were put into each well then added with binahong leaf extract at concentrations of 2,5%, 5%, 10%, 0.1% *chlorhexidine gluconate* as a positive control, and aquadest as a negative control. This study used 6 replications on 96 well-microplates. Microplates were incubated at 37°C for 24 hours, rinsed using phosphate buffer saline, and stained with 0.1% crystal violet. Reading the results of the biofilm formation inhibition test using a microplate reader with a wavelength of 450 nm.

The results of the One Way ANOVA test showed that there were significant differences between test groups in inhibiting the formation of *S. sanguinis* ATCC 10556 biofilms. The Post-Hoc Least Significant Difference (LSD) test showed that there was a significant difference between binahong leaf extract concentrations of 2,5%, 5%, 10%, and 0.1% chlorhexidine gluconate. The conclusion of this study is that binahong leaf extract at a concentration of 10% compared to lower concentrations has the highest ability to inhibit the formation of *S. sanguinis* ATCC 10556 biofilm, but its effectiveness is lower compared to 0.1% *chlorhexidine gluconate.*

Key words: *Streptococcus sanguinis*, binahong leaf extract, inhibition of biofilm formation.