

INTISARI

Streptococcus sanguinis merupakan bakteri pionir yang berperan dalam kolonisasi bakteri pembentukan biofilm. Hidrofobisitas merupakan salah satu kemampuan bakteri untuk melekat pada inang dan berpotensi memfasilitasi pembentukan biofilm. Daun kenikir (*Cosmos caudatus* Kunth.) memiliki senyawa aktif seperti saponin, tanin, dan flavonoid yang berperan sebagai antibakteri. Tujuan studi ini adalah untuk mengetahui efek rebusan daun kenikir terhadap hidrofobisitas bakteri *S. sanguinis* ATCC 10556 secara *in vitro*.

Uji hidrofobisitas dilakukan dengan metode pengukuran sudut kontak. Kelompok uji pada penelitian ini adalah sebanyak 500 µl rebusan daun kenikir konsentrasi 16%, 32%, dan 64%, klorheksidin glukonat 0,2% sebagai kontrol positif, serta akuades sebagai kontrol negatif. Suspensi bakteri 100 µl dan media BHI-B 400 µl dimasukkan dalam kelompok uji diinkubasi selama 24 jam suhu 37°C kemudian disentrifugasi selama 5 menit. Pelet bakteri ditanam pada media dan didepositkan ke dalam membran filter selulosa asetat diinkubasi selama 18 jam suhu 37°C. Selanjutnya membran filter selulosa asetat dilakukan *drop file analysis* dan diukur menggunakan *software imageJ*. Data dianalisis menggunakan uji parametrik *one-way* ANOVA dan *Post-Hoc* LSD ($p < 0,05$).

Hasil uji *one-way* ANOVA menunjukkan adanya perbedaan yang signifikan antar kelompok uji dalam menurunkan hidrofobisitas bakteri *S. sanguinis* ATCC 10556. Hasil uji *Post-Hoc* LSD rebusan daun kenikir konsentrasi 16% dan 32% memiliki efektivitas yang sama dengan klorheksidin glukonat 0,2%. Kesimpulan pada penelitian ini adalah rebusan daun kenikir konsentrasi 8%, 16%, dan 32% dapat menurunkan hidrofobisitas bakteri *S. sanguinis* ATCC 10556. Rebusan daun kenikir konsentrasi 16% memiliki efektivitas yang sama dengan klorheksidin glukonat 0,1% dan peningkatan rebusan daun kenikir hingga konsentrasi 32% mampu menurunkan hidrofobisitas bakteri *S. sanguinis* ATCC 10556.

Kata Kunci: *Streptococcus sanguinis*, hidrofobisitas, daun kenikir (*Cosmos caudatus* Kunth.)

ABSTRACT

Streptococcus sanguinis is a pioneer bacteria that plays a role in the bacterial colonization of biofilm formation. Hydrophobicity is one of the abilities of bacteria to attach to the host and potentially facilitate biofilm formation. Kenikir leaves (*Cosmos caudatus* Kunth.) have active compounds such as saponins, tannins and flavonoids which act as antibacterials. The aim of this study was to determine the effect of boiled kenikir leaves on the hydrophobicity of the bacteria *S. sanguinis* ATCC 10556 *in vitro*.

The hydrophobicity test was carried out using the contact angle measurement method. The test groups in this study were 500 µl of boiled kenikir leaves with concentrations of 16%, 32%, and 64%, 0.2% chlorhexidine gluconate as a positive control, and distilled water as a negative control. A total of 100 µl of bacterial suspension and 400 µl BHI-B media were included in the test group, incubated for 24 hours at 37°C then centrifuged for 5 minutes. Bacterial pellets were planted in the media and deposited into cellulose acetate filter membranes, incubated for 18 hours at 37°C. Next, the cellulose acetate filter membrane was subjected to drop file analysis and measured using imageJ software. Data were analyzed using One-way ANOVA and *Post-Hoc* LSD parametric tests ($p < 0.05$).

The results of the One-way ANOVA test showed that there were significant differences between the test groups in reducing the hydrophobicity of the *S. sanguinis* ATCC 10556 bacteria. The *Post-Hoc*'s LSD showed that boiled kenikir leaves with concentrations of 16% and 32% had the same effectiveness as chlorhexidine gluconate 0.2%. The conclusion of this research is that boiled kenikir leaves with concentrations of 8%, 16% and 32% can reduce the hydrophobicity of the bacteria *S. sanguinis* ATCC 10556. Boiled kenikir leaves concentration of 16% have the same effectiveness as 0.1% chlorhexidine gluconate and increase the boiled kenikir leaves to a concentration of 32% was able to reduce the hydrophobicity of the *S. sanguinis* ATCC 10556 bacteria.

Key words: *Streptococcus sanguinis*, hydrophobicity, kenikir leaves (*Cosmos caudatus* Kunth.)