INTISARI

Staphylococcus aureus merupakan bakteri patogen oportunistik yang dapat diisolasi dari infeksi rongga mulut, seperti peri-implantitis dan periodontitis. Salah satu yang mempengaruhi perlekatan bakteri pada inang adalah hidrofobisitas. Daun eceng gondok (*Eichhornia crassipes*) memiliki kandungan aktif seperti flavonoid, alkaloid, dan tanin yang berpotensi untuk menghambat perlekatan bakteri. Tujuan penelitian ini adalah untuk mengetahui pengaruh ekstrak daun eceng gondok terhadap hidrofobisitas *S. aureus* ATCC 25923 *in vitro*.

Daun eceng gondok diekstraksi menggunakan metode maserasi kemudian diencerkan menggunakan akuades. Uji hidrofobisitas dilakukan dengan metode *drop-profile analysis*. 100 µL suspensi bakteri *S. aureus* dipaparkan ke dalam *chlorhexidine* 0,2% (kontrol positif), NaCl 0,9% (kontrol negatif), dan ekstrak daun eceng gondok konsentrasi 20%, 10%, dan 5% sebagai kelompok uji, kemudian diinkubasi selama 18 jam pada suhu 37°C. 6 µL akuades diteteskan pada membran filter selulosa asetat dan difoto. *Drop-profile analysis* dilakukan dengan cara mengukur sudut kontak antara permukaan membran filter selulosa asetat yang sudah terdeposit bakteri dengan tetesan akuades. Sudut kontak diukur menggunakan *software Image-J*. Data dianalisis menggunakan uji *One-Way* ANOVA dan dilanjutkan dengan uji *Post-Hoc* LSD.

Hasil uji *One-Way* ANOVA menunjukkan adanya perbedaan yang signifikan antar kelompok (p=0,000). Hasil uji *Post-Hoc* LSD menunjukkan tidak terdapat perbedaan yang signifikan (p>0,05) antara konsentrasi 5%, 10%, dan 20% dengan *chlorhexidine* 0,2%. Kesimpulan penelitian ini adalah ekstrak daun eceng gondok konsentrasi 5%, 10%, 20% memiliki kemampuan menurunkan hidrofobisitas *S. aureus* ATCC 25923 yang setara dengan *chlorhexidine* 0,2%.

Kata kunci: Hidrofobisitas, Daun Eceng Gondok*, Staphylococcus aureus*

ABSTRACT

Staphylococcus aureus is an opportunistic pathogenic bacteria that can be isolated from oral infections, such as peri-implantitis and periodontitis. Hydrophobicity is one that affects the attachment of bacteria to the host. Water hyacinth leaves (*Eichhornia crassipes*) have an active ingredients such as flavonoids, alkaloids, and tannins which have the potential to inhibit bacterial attachment. This study aims to determine the effect of water hyacinth leaf extract on the hydrophobicity of *S. aureus* ATCC 25923 *in vitro*.

Water hyacinth leaves were extracted using the maceration method and then diluted using distilled water. The hydrophobicity was determined using the drop-profile analysis method. 100 µL of *S. aureus* bacterial suspension were exposed into 0.2% chlorhexidine (positive control), 0.9% NaCl (negative control), and water hyacinth leaf extract concentrations of 20%, 10%, and 5% as the treatment group, then incubated for 18 hours at 37°C. 6 µL distilled water were dropped onto a cellulose acetate filter membrane, then photographed. Drop-profile analysis was carried out by measuring the contact angle between the surface of the cellulose acetate filter membrane which had been deposited by bacteria and the distilled water droplets. The contact angle was then measured using Image-J software. The data were analysed using One-Way ANOVA test and LSD post hoc test.

The results of One-Way ANOVA test showed that there were a significant difference among groups ($p<0.05$). The results of LSD post hoc test showed there was no significant difference ($p>0.05$) between concentrations of 5%, 10%, and 20% with 0.2% chlorhexidine. The conclusion of this study is that water hyacinth leaf extract has the ability to reduce the hydrophobicity of *S. aureus* ATCC 25923 with concentrations of 5%, 10%, 20% having the same effectiveness as 0.2% chlorhexidine in reducing the hydrophobicity of *S. aureus*.

Keywords: Hydrophobicity, Water hyacinth leaves, Staphylococcus aureus