INTISARI

Streptococcus mutans merupakan bakteri Gram positif fakultatif anaerob yang mampu menyebabkan karies gigi. Hidrofobisitas merupakan interaksi yang menghasilkan perlekatan bakteri secara non spesifik pada permukaan gigi. Daun karika (*Carica pubescens*) mengandung senyawa aktif antibakteri antara lain alkaloid, tanin, fenol, saponin dan flavonoid. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak daun karika terhadap hidrofobisitas *S. mutans* ATCC 25175.

Daun karika diekstraksi menggunakan metode maserasi dan diencerkan menggunakan akuades. Hidrofobisitas *S. mutans* ATCC 25175 ditentukan dengan metode pengukuran sudut kontak. Suspensi bakteri setara 0,5 McFarland dicampur ekstrak daun karika konsentrasi 1,30%, 2,60%, dan 5,21%, klorheksidin glukonat 0,2% (kontrol positif), NaCl 0,9% (kontrol negatif). Suspensi yang telah dicampur diinkubasi dan didepositkan ke dalam membran filter selulosa asetat selama 24 jam. Membran filter selulosa asetat dikeringkan lalu dilakukan *drop-profile analysis* dan dilanjutkan dengan pengukuran sudut kontak menggunakan *software Image-J*. Data dianalisis menggunakan uji O*ne-Way* ANOVA *Welch* dan dilanjutkan uji *Post-Hoc Games-Howell*.

Hasil uji *One-way* ANOVA *Welch* menunjukkan nilai hidrofobisitas yang signifikan antar kelompok ($p<0,05$). Hasil uji *Games-Howell* menunjukkan bahwa konsentrasi 2,60% dan 5,21% efektif dalam menurunkan hidrofobisitas *S. mutans* ATCC 25175. Kesimpulan penelitian ini adalah ekstrak daun karika mampu menurunkan hidrofobisitas *S. mutans* ATCC 25175. Ekstrak daun karika konsentrasi 5,21% memiliki efektivitas paling tinggi dalam menurunkan hidrofobisitas *S. mutans* dibandingkan konsentrasi 1,30% dan 2,60%, tetapi masih lebih rendah dibandingkan klorheksidin glukonat 0,1%.

Kata Kunci: *Streptococcus mutans*, ekstrak daun karika, hidrofobisitas.

ABSTRACT

Streptococcus mutans is a facultative anaerobic Gram-positive bacterium that causes dental caries. The hydrophobicity of *S. mutans* affect its attachment ability to the tooth surface. Karika leaves (*Carica pubescens*) contain active antibacterial compounds such as alkaloids, tannins, phenols, saponins and flavonoids. This study aimed to determine the effect of karika leaf extract on the hydrophobicity of *S. mutans* ATCC 25175.

Karika leaves were extracted using the maceration method and diluted using distilled water. The hydrophobicity of *S. mutans* ATCC 25175 was determined by the contact angle measurement method. Bacterial suspension of 0,5 McFarland mixed with karika leaf extract at concentrations of 1.30%, 2.60% and 5.21%, 0.2% chlorhexidine gluconate (positive control), 0.9% NaCl (negative control). The mixed suspension was incubated and deposited into the cellulose acetate filter membrane for 24 hours. The cellulose acetate filter membrane was dried then drop-profile analysis was carried out and followed by contact angle measurements using *Image-J software*. Data were analyzed using the *One-Way* ANOVA *Welch* test and continued with the *Post-Hoc Games-Howell* test.

The results of the *One-Way* ANOVA *Welch* test showed significant hydrophobicity values among groups ($p<0.05$). The results of the *Games-Howell* test showed that a concentration of 2.60% and 5.21% were effective in reducing the hydrophobicity of *S. mutans* ATCC 25175. This research concludes that karika leaf extract can reduce the hydrophobicity of *S. mutans* ATCC 25175. Karika leaf extract with a concentration of 5.21% has the highest effectiveness in reducing the hydrophobicity of *S. mutans* compared to concentrations of 1.30% and 2.60%, although its effectiveness is lower than 0.1% chlorhexidine gluconate.

Keywords: *Streptococcus mutans*, karika leaf extract, hydrophobicity.