

## INTISARI

*Candida albicans* merupakan mikroorganisme komensal pada rongga mulut. Adanya faktor tertentu membuat jamur ini dapat mengalami perubahan menjadi mikroorganisme patogen dan berperan dalam perkembangan plak gigi. Sifat hidrofobisitas *C. albicans* memengaruhi kemampuan perlekatannya pada permukaan gigi. Daun stevia (*Stevia rebaudiana* Bertoni) mengandung zat aktif seperti alkaloid, flavonoid, tanin, fenol, dan *stevioside* yang berpotensi menghambat perlekatan jamur. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak daun *Stevia rebaudiana* Bertoni terhadap hidrofobisitas *C. albicans* ATCC 10231.

Hidrofobisitas jamur diamati menggunakan metode pengukuran sudut kontak. Suspensi jamur *C. albicans* ATCC 10231 dicampur dalam kelompok ekstrak daun stevia (konsentrasi 5,36%, 10,71%, dan 21,43%), *phosphate buffer saline* (kontrol negatif), dan klorheksidin glukonat 0,2% (kontrol positif) lalu diinkubasi pada suhu 37°C selama 24 jam. Jamur dikultur kembali pada media SDB dan didepositkan pada membran filter selulosa asetat selama 24 jam. Jamur yang telah terdeposit pada membran filter selulosa asetat dilakukan *drop-profile analysis* dan dilakukan pengukuran sudut kontak menggunakan *software ImageJ*.

Hasil uji *One Way* ANOVA menunjukkan bahwa terdapat perbedaan secara signifikan ( $p < 0,05$ ) rerata sudut kontak antar kelompok. Hal ini menunjukkan bahwa ekstrak daun stevia memiliki kemampuan untuk menurunkan hidrofobisitas jamur *C. albicans*. Hasil uji *Post-Hoc* LSD menunjukkan adanya perbedaan yang signifikan ( $p < 0,05$ ) pada kelompok perlakuan ekstrak daun stevia konsentrasi 5,36%, 10,71%, dan 21,43% dengan kontrol negatif (*phosphate buffer saline*). Kesimpulan dari penelitian ini adalah ekstrak daun stevia konsentrasi 5,36%, 10,71%, dan 21,43% dapat menurunkan hidrofobisitas jamur *C. albicans* ATCC 10231. Konsentrasi ekstrak 5,36%, 10,71%, dan 21,43% memiliki efektivitas yang setara dalam menurunkan hidrofobisitas jamur *C. albicans* ATCC 10231 tetapi kemampuannya masih di bawah klorheksidin glukonat 0,2%.

**Kata kunci:** ekstrak daun stevia, hidrofobisitas, *Candida albicans* ATCC 10231

## ABSTRACT

*Candida albicans* is a commensal microorganism in the oral cavity. The presence of certain factors can cause this fungus to change into a pathogenic microorganism and play a role in the formation of dental plaque. The hydrophobicity of *C. albicans* affects its ability to adhere to the tooth surface. Stevia leaves (*Stevia rebaudiana* Bertoni) contain active substances such as alkaloids, flavonoids, tannins, phenols, and stevioside that have the potential to inhibit fungal adhesion. This study aimed to determine the effect of *Stevia rebaudiana* Bertoni leaf extract on the hydrophobicity of *C. albicans* ATCC 10231.

The hydrophobicity of the fungus was observed using the contact angle measurement method. *Candida albicans* ATCC 10231 fungal suspension was mixed with various concentration of stevia leaf extract (concentration 5.36%, 10.71%, and 21.43%), phosphate buffer saline (negative control), and 0.2% chlorhexidine gluconate (positive control) then incubated at 37°C for 24 hours. The fungus was re-cultured in SDB media and deposited on cellulose acetate filter membrane for 24 hours. The fungus that had been deposited on the cellulose acetate filter membrane was subjected to drop-profile analysis and the contact angle was measured using ImageJ software.

One Way ANOVA test showed that there was a significant difference ( $p < 0.05$ ) in the mean contact angle among groups. This indicated that stevia leaf extract has the ability to reduce the hydrophobicity of *C. albicans* fungus. The results of the Post-Hoc LSD test showed a significant difference ( $p < 0.05$ ) in the treatment groups of stevia leaf extract concentrations of 5.36%, 10.71%, and 21.43% with negative control (phosphate buffer saline). The conclusion of this study is that stevia leaf extract concentrations of 5.36%, 10.71%, and 21.43% can reduce the hydrophobicity of *C. albicans* ATCC 10231. The extract concentrations of 5.36%, 10.71%, and 21.43% have equivalent effectiveness in reducing the hydrophobicity of *C. albicans* ATCC 10231 but their effectivity is less than chlorhexidine gluconate 0.2%.

**Keywords:** stevia leaf extract, hydrophobicity, *Candida albicans* ATCC 10231