

## INTISARI

*Candida albicans* merupakan jamur Gram positif, berbentuk globular hingga oval dengan diameter 3-5  $\mu\text{m}$ . Jamur ini berperan dalam terjadinya karies gigi. Daun stevia memiliki kandungan zat aktif seperti flavonoid, tanin, dan *stevioside* yang mampu menghambat pembentukan EPS yang berperan dalam perlekatan sel. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak daun *Stevia rebaudiana* B. terhadap penghambatan pembentukan biofilm *C. albicans* ATCC 10231 *in vitro*.

Uji *Minimum Inhibitory Concentration* (MIC) dilakukan dan didapatkan hasil konsentrasi MIC yaitu 10,71%. Uji penghambatan pembentukan biofilm dilakukan menggunakan *96-wells microplate*. Ekstrak daun stevia konsentrasi 5,36%, 10,71%, dan 21,43%, *chlorhexidine gluconate* 0,2% sebagai kontrol positif, serta saline sebagai kontrol negatif dimasukkan sebanyak 50  $\mu\text{l}$  ke dalam sumuran. Kemudian ditambahkan 40  $\mu\text{l}$  media SDB dan 10  $\mu\text{l}$  suspensi *C. albicans* ke masing-masing sumuran. Sumuran diinkubasi selama 24 jam pada suhu 37°C. Biofilm kemudian diwarnai dengan kristal violet 0,1%. *Optical density* diukur menggunakan *microplate reader* dengan Panjang gelombang 450 nm. Selanjutnya data dianalisis dengan *Welch ANOVA* dan *Post-Hoc Games-Howell*.

Hasil uji statistik menunjukkan adanya perbedaan signifikan antar kelompok perlakuan. Dari penelitian ini dapat disimpulkan bahwa ekstrak daun stevia memiliki kemampuan menghambat pembentukan biofilm *C. albicans*. Ekstrak daun stevia konsentrasi 21,43% memiliki kemampuan menghambat pembentukan biofilm *C. albicans* yang lebih efektif dibandingkan dengan konsentrasi lainnya, tetapi efektivitasnya lebih rendah dibanding *chlorhexidine gluconate* 0,2%.

**Kata kunci:** Ekstrak daun stevia, penghambatan pembentukan biofilm, *Candida albicans*.

## ABSTRACT

*Candida albicans* is a Gram-positive fungus, globular to oval in shape with a diameter of 3-5  $\mu\text{m}$ . This fungus plays a role in the occurrence of dental caries. Stevia leaves contain active substances such as flavonoids, tannins, and stevioside that can inhibit the formation of EPS which plays a role in cell attachment. This study aimed to determine the effect of *Stevia rebaudiana* B. leaf extract on the inhibition of biofilm formation of *C. albicans* ATCC 10231 *in vitro*.

Minimum Inhibitory Concentration (MIC) test result was 10.71%. Biofilm formation inhibition test was conducted using 96-wells microplate. Stevia leaf extract concentrations of 5.36%, 10.71%, and 21.43%, chlorhexidine gluconate 0.2% (positive control), and saline (negative control) were added as much as 50  $\mu\text{l}$  into the wells. Then 40  $\mu\text{l}$  of SDB media and 10  $\mu\text{l}$  of *C. albicans* suspension were added to each well. The wells were incubated for 24 hours at 37°C. Biofilms were then stained with 0.1% crystal violet. The optical density was measured using a microplate reader at a wavelength of 450 nm. Furthermore, the data were analyzed with Welch ANOVA and Post-Hoc Games-Howell.

Statistical test results showed significant differences among the groups. It can be concluded that stevia leaf extract has the ability to inhibit the formation of *C. albicans* biofilm. The 21.43% stevia leaf extract has the highest ability to inhibit the formation of *C. albicans* biofilm than the other concentrations. However, its effectivity is less than 0,2% chlorhexidine gluconate.

**Keywords:** Stevia leaf extract, inhibition of biofilm formation, *Candida albicans*.