

## INTISARI

*Streptococcus sanguinis* merupakan bakteri Gram positif yang berperan penting dalam pembentukan awal biofilm. Daun pegagan atau *Centella asiatica* (L.) Urb. mengandung bahan aktif seperti saponin, flavonoid, tannin, *asiatic acid* dan triterpenoid yang memiliki efek antibakteri. Penelitian ini bertujuan untuk mengetahui daya destruksi biofilm *S. sanguinis* ATCC 10556 akibat paparan ekstrak daun pegagan.

Uji destruksi biofilm dilakukan dengan menggunakan metode *microtiter plate*. Biofilm dibuat dengan menginkubasi suspensi *S. sanguinis* dengan BHI-B pada suhu 37°C selama 24 jam. Setelah biofilm terbentuk, variasi konsentrasi ekstrak (8,57%, 4,28%, 2,14%), *chlorhexidine gluconate* 0,2% (kontrol positif) dan NaCl 0,9% (kontrol negatif) ditambahkan ke dalam *microtiter plate* sebanyak 50 µl. Setelah 24 jam inkubasi, biofilm diwarnai menggunakan kristal violet 0,1%. *Optical density* dibaca menggunakan *microplate reader* ( $\lambda=450$  nm).

Uji *Welch's* ANOVA menunjukkan adanya perbedaan yang signifikan ( $p<0,05$ ) pada persentase destruksi biofilm *S. sanguinis* antar kelompok uji yang membuktikan bahwa ekstrak daun pegagan mampu mendestruksi biofilm *S. sanguinis* ATCC 10556. Uji *Games Howell Post Hoc* menunjukkan bahwa pada kelompok ekstrak 4,28% mempunyai efektivitas setara dengan *chlorhexidine gluconate* 0,2% dalam mendestruksi biofilm *S. sanguinis* ATCC 10556. Kesimpulan penelitian ini adalah ekstrak etanol daun pegagan dengan konsentrasi 4,28% dan *chlorhexidine gluconate* 0,2% memiliki efektivitas yang setara dalam mendestruksi biofilm *S. sanguinis* ATCC 10556.

**Kata kunci:** ekstrak etanol daun pegagan, destruksi biofilm, *Streptococcus sanguinis*.

## ABSTRACT

*Streptococcus sanguinis* is a Gram-positive bacterium that plays an important role in the initial formation of biofilm. Pegagan or *Centella asiatica* (L.) Urb. leaves contain active ingredients such as saponin, flavonoid, tannin, asiatic acid and triterpenoids which have antibacterial effects. This research aimed to determine the destruction activity of *S. sanguinis* ATCC 10556 biofilm due to exposure to Pegagan or *Centella asiatica* leaf extract.

The biofilm destruction test was carried out using the microtiter plate method. Biofilm were prepared by incubating the *S. sanguinis* suspension with BHI-B at 37°C for 24 hours. After the biofilm was formed, various concentrations extract (8.57%, 4.28%, 2.14%), 0.2% *chlorhexidine gluconate* (positive control) and 0.9% NaCl (negative control) were added to the microtiter plate as much as 50 µl. After 24 hours of incubation, biofilm were stained using 0.1% crystal violet. Optical density was read using a microplate reader ( $\lambda=450$  nm).

The Welch's ANOVA test showed a significant difference ( $p<0.05$ ) in the percentage of *S. sanguinis* biofilm destruction between the test groups which proved that Pegagan leaves extract was able to destroy *S. sanguinis* ATCC 10556 biofilm. The Games Howell Post Hoc test showed that the 4.28% extract had the same effectiveness as 0.2% *chlorhexidine gluconate* in destroying *S. sanguinis* ATCC 10556 biofilm. This study concluded that the ethanol extract of *Centella asiatica* leaves with a concentration of 4.28% and 0.2% *chlorhexidine gluconate* had equivalent effectiveness in destroys *S. sanguinis* ATCC 10556 biofilm.

**Keywords:** ethanol extract of Pegagan or *Centella asiatica* (L.) Urb leaves, biofilm destruction, *Streptococcus sanguinis*.