# INTISARI

*Streptococcus sanguinis* merupakan bakteri yang menginisiasi pembentukan biofilm dalam rongga mulut. Kulit pisang raja (*Musa paradisiaca var Raja*) mengandung alkaloid, tanin, dan saponin yang memiliki sifat antiadhesi dan antibakteri. Penelitian ini bertujuan untuk mengetahui pengaruh ekstrak kulit pisang raja terhadap penghambatan pembentukan biofilm *S. sanguinis* ATCC 10556.

Uji penghambatan pembentukan biofilm *S. sanguinis* ATCC 10556 dilakukan menggunakan 96-*well microplate* dengan kontrol positif berupa klorheksidin glukonat 0,2%, kontrol negatif berupa akuades, dan ekstrak kulit pisang raja konsentrasi 6,25%, 12,50%, 25%, dan 50%. Seluruh kelompok yang masing-masing berjumlah 8 sampel kultur bakteri diinkubasi selama 24 jam pada suhu 37°C kemudian biofilm diwarnai menggunakan kristal violet 0,1%. Pengukuran ketebalan massa biofilm dilakukan menggunakan sektrofotometer pada panjang gelombang 450nm.

Analisis hasil dilakukan menggunakan uji *one-way ANOVA* hasilnya menunjukkan perbedaan bermakna ($p<0,05$). Analisis dilanjutkan dengan uji *post hoc* Tukey HSD yang menunjukkan adanya perbedaan bermakna pada ekstrak kulit pisang raja antar konsentrasi 6,25%, 12,50%, 25%, dan 50%. Ekstrak konsentrasi 50% dengan klorheksidin glukonat 0,2% tidak menunjukkan perbedaan yang singnifikan ($p>0,05$). Disimpulkan bahwa ekstrak kulit pisang raja konsentrasi 6,25%, 12,50%, 25%, dan 50% dapat menghambat pembentukan biofilm *S. sanguinis* ATCC 10556. Ekstrak kulit pisang raja konsentrasi 50% mempunyai efektivitas penghambatan pembentukan biofilm yang setara dengan klorheksidin glukonat 0,2%.

**Kata kunci :** *Streptococcus sanguinis,* ekstrak kulit pisang raja, penghambatan pembentukan biofilm.

# ABSTRACT

*Streptococcus sanguinis* is a bacteria that initiates the formation of biofilms in the oral cavity. Plantain peel (*Musa paradisiaca var. Raja*) contains alkaloids, tannins, and saponins wich contain antiadhesion and antibacterial properties. The purpose of this study was to determine the effect of plantain peel extract on inhibiting biofilm formation in *S. sanguinis* ATCC 10556.

The inhibition test for biofilm formation of *S. sanguinis* ATCC 10556 was carried out using a 96-well microplate, the positive control was 0,2% chlorhexidine gluconate, negative control was distilled water (aquades), and plantain peel extract in concentrations of 6.25%, 12.50%, 25%, and 50%. All groups, each with 8 bacterial culture samples, were incubated for 24 hours at 37°C, and then the biofilm was stained using 0,1% crystal violet. Biofilm mass thickness was measured using a spectrophotometer at a wavelength of 450nm.

The analysis of the results was carried out using a one-way ANOVA test, the results showed significant differences in each test group ($p<0,05$). The analysis was continued with the Tukey HSD post hoc test, which showed that there were significant differences in plantain peel extract between concentrations of 6.25%, 12.50%, 25%, and 50%. The 50% concentration extract with 0,2% chlorhexidine gluconate did not show a significant difference ($p>0,05$). It was concluded that plantain peel extract with concentration of 6.25%, 12.50%, 25%, and 50% could inhibit the formation of biofilms of *S. sanguinis* ATCC 10556. Plantain peel extract with a concentration of 50% had the same effectiveness in inhibiting biofilm formation as chlorhexidine gluconate 0,2%.

Key words: *Streptococcus sanguinis*, plantain peel extract, biofilm inhibition.