

INTISARI

Streptococcus sanguinis merupakan bakteri poinir pembentuk plak gigi. *Streptococcus sanguinis* mampu memproduksi enzim glukosiltransferase yang dapat mengubah sukrosa menjadi glukosa yang berperan pada perlekatan bakteri ke permukaan gigi. Daun mengkudu memiliki kandungan yang telah terbukti sebagai antibakteri dan antiseptik yaitu flavonoid, tanin, saponin. Penelitian ini bertujuan untuk meneliti pengaruh rebusan daun mengkudu terhadap perlekatan bakteri *S. sanguinis* ATCC 10556 *in vitro*.

Subyek penelitian ini adalah kultur *S. sanguinis* ATCC 10556 yang dikategorikan sebagai kelompok perlakuan rebusan daun mengkudu konsentrasi 1%, 2,5%, 5%, 7,5%, 10%, dan kelompok kontrol negatif (akuades). Rebusan daun mengkudu dan akuades dimasukan kedalam sumuran yang mengandung 1 µl suspensi bakteri dalam BHI. Kultur diinkubasi selama 24 jam pada suhu 37°C, kemudian dicuci menggunakan PBS dan diwarnai menggunakan kristal violet 0,1%. Daya hambat rebusan daun mengkudu terhadap perlekatan bakteri ditentukan berdasarkan nilai densitas optik yang diukur pada panjang gelombang 540 nm. Data berupa persentase perlekatan bakteri dianalisis menggunakan *One-Way* ANOVA dan *Post Hoc* LSD.

Hasil analisis *One-Way* ANOVA menunjukan perbedaan signifikansi persentase penghambatan perlekatan antar kelompok. Analisis *Post Hoc* LSD menunjukan perbedaan signifikan kelompok perlakuan rebusan daun mengkudu konsentrasi 1%, 2,5%, 5%, 7,5% dan 10% terhadap kontrol negatif, sedangkan perbedaan tidak bermakna antara rebusan 1% dengan 2,5%. Kesimpulan dari penelitian ini adalah rebusan daun mengkudu dapat menghambat perlekatan bakteri *S. sanguinis*. Rebusan daun mengkudu konsentrasi 10% lebih efektif menghambat perlekatan *S. sanguinis* dibandingkan konsentrasi 1%, 2,5% dan 5% dan 7,5%.

ABSTRACT

Streptococcus sanguinis is a pioneer in dental plaque formation. *Streptococcus sanguinis* were capable of producing glucosyltransferase enzyme that catalyze the canged of sucrose into glucan which act on the attachment of bacteria to the tooth surface. *Morinda citrifolia* L. leaf contains flavonoids, tannins, and saponins which has been proved as antibacterial and antiseptic. This study's aim was to investigate the effect of *Morinda citrifolia* L. leaf decoction to *S. sanguinis* ATCC 10556 adherence in vitro.

The subjects were *S. sanguinis* ATCC 10556 culture, which was categorized as group of *Morinda citrifolia* L. leaf decoction with 1%, 2,5%, 5%, 7,5%, 10% concentration, and group of negative control (aquades). *Morinda citrifolia* L. decoction and aquades were added into the well, which contains 1 μ l suspension bacteria in BHI broth. Culture was incubated for 24 hours at 37 °C, then it washed by using PBS and stained using 0,1% crystal violet. Power inhibition of *Morinda citrifolia* L. leaf decoction toward bacterial adhesion was determined based on the optical density measured at a wavelength of 540 nm. The data which shows percentage of bacterial adhesion was analyzed using ANOVA One-Way and Post Hoc LSD.

ANOVA One-Way analysis result showed significant inhibition difference between those two groups. LSD analysis showed significant difference percentage of inhibiton between control negative and *Morinda Citrifolia* L. leaf decoction 1%, 2,5%, 5%, 7,5%, and 10%. There was no significant difference which was found between decoction 1% and 2,5%. The study concludes that *Morinda Citrifolia* leaf decoction could inhibit *S. sanguinis* adhesion. *Morinda citrifolia* L. leaf decoction with 10% concentration are more effective in inhibiting *S. sanguinis* adhesion than 1%, 2,5%, 5% and 7,5% concentration.