

## INTISARI

Periodontitis adalah peradangan kronis pada periodonsium yang disebabkan oleh akumulasi plak di rongga mulut yang terdiri dari bakteri periodontopatogen, salah satunya *Prevotella intermedia*. Perawatan periodontitis, yaitu *scaling* dan *root planing*, kurang efektif dalam menghambat pertumbuhan bakteri yang berinvansi ke dalam jaringan sehingga diperlukan terapi adjuvan, salah satunya dengan pemberian *Aloe vera* yang mengandung senyawa antibakteri dan mampu penetrasi ke jaringan, namun masih perlu penambahan *Lactobacillus casei* untuk mencegah rekolonisasi bakteri periodontopatogen. Penelitian ini bertujuan untuk mengetahui pengaruh penambahan probiotik *Lactobacillus casei* pada gel *Aloe vera* berbagai konsentrasi terhadap daya hambat pertumbuhan *Prevotella intermedia*.

Uji daya hambat *Prevotella intermedia* dilakukan menggunakan metode difusi cakram dengan tujuh kelompok uji diantaranya tiga kelompok perlakuan (kelompok gel *Aloe vera* 5%, 10%, 15% diperkaya *Lactobacillus casei*) dan empat kelompok kontrol (kontrol probiotik (salin diperkaya *Lactobacillus casei*), kontrol negatif (pelarut salin), kontrol MIC (gel *Aloe vera* 20%), dan kontrol positif (CHX)). Pengukuran diameter zona hambat dilakukan menggunakan *sliding caliper* dan dianalisis menggunakan uji *One Way ANOVA* dan *Post Hoc Games-Howell*.

Hasil penelitian menunjukkan bahwa terdapat perbedaan zona hambat yang signifikan pada ketiga kelompok perlakuan ( $p > 0,05$ ). Pada kelompok gel *Aloe vera* 5%, 10%, 15% diperkaya *Lactobacillus casei* terdapat peningkatan zona hambat seiring dengan peningkatan konsentrasi gel *Aloe vera*, meskipun daya hambat dari ketiga kelompok perlakuan lebih kecil dibandingkan kontrol MIC dan kontrol positif. Kesimpulan dari penelitian ini adalah penambahan probiotik *Lactobacillus casei* pada gel *Aloe vera* berbagai konsentrasi berpengaruh meningkatkan daya hambat pertumbuhan *Prevotella intermedia*.

Kata kunci: gel *Aloe vera*, *Lactobacillus casei*, *Prevotella intermedia*, antibakteri, daya hambat

## **ABSTRACT**

Periodontitis is a chronic inflammation of the periodontium caused by the accumulation of plaque in the oral cavity consisting of periodontopathogenic bacteria, such as *Prevotella intermedia*. Treatment of periodontitis, scaling and root planing, is less effective in inhibiting the growth of bacteria that invade the tissues thus adjuvant therapy, such as the administration of *Aloe vera* which contains antibacterial compounds and capable of penetration into the tissue is needed, but still requires the addition of *Lactobacillus casei* to prevent the recolonization of the periodontopathogenic bacteria. This study aims to determine the influence of adding *Lactobacillus casei* probiotics at various concentrations of *Aloe vera* gel on the inhibitory effect on the growth of *Prevotella intermedia*.

The inhibition test of *Prevotella intermedia* was conducted using the disc diffusion method with seven test groups, including three treatment groups (*Aloe vera* gel at 5%, 10%, 15% enriched with *Lactobacillus casei*) and four control groups (probiotic control group (saline enriched with *Lactobacillus casei*), negative control group (saline solvent), MIC control group (*Aloe vera* gel 20%), and positive control group (CHX)). The measurement of the diameter of the inhibition zone was carried out using a sliding caliper and analyzed using One Way ANOVA and Post Hoc Games-Howell.

The results showed that there were significant differences in the inhibition zones in three treatment groups ( $p > 0.05$ ). In the *Aloe vera* gel groups at 5%, 10%, 15% enriched with *Lactobacillus casei*, there was an increase in the inhibition zone with the increasing concentration of *Aloe vera* gel, although the inhibitory power of the three treatment groups was smaller compared to the MIC control and positive control. The conclusion of this study is that the addition of *Lactobacillus casei* probiotics at various concentrations of *Aloe vera* gel has an effect on increasing the inhibitory effect on the growth of *Prevotella intermedia*.

**Keywords:** *Aloe vera* gel, *Lactobacillus casei*, *Prevotella intermedia*, antibacterial, inhibition zone