

INTISARI

Periodontitis merupakan penyakit pada jaringan pendukung gigi yang mengakibatkan kerusakan tulang alveolar dan ligamen periodontal. *Porphyromonas gingivalis* merupakan bakteri patogen penyebab periodontitis karena memiliki faktor virulensi yang dapat menyebabkan fagositosis menurun dan resorpsi tulang alveolar. Daun binahong merupakan bahan herbal yang mempunyai sifat antibakteri untuk menghambat pertumbuhan bakteri *P. gingivalis*. Daun binahong mengandung senyawa metabolit sekunder berupa flavonoid, tanin, alkaloid, dan saponin. Tujuan penelitian ini adalah untuk mengetahui potensi antibakteri ekstrak etanolik daun binahong [*Anredera cordifolia* (ten.) steenis.] terhadap pertumbuhan bakteri *Porphyromonas gingivalis* (kajian *in vitro*).

Daun binahong [*Anredera cordifolia* (ten.) steenis.] diekstraksi menggunakan metode maserasi. Pengujian aktivitas antibakteri menggunakan metode difusi cakram. Masing-masing cakram diskus yang telah direndam klorheksidin 0,2% sebagai kontrol positif, DMSO 5% sebagai kontrol negatif, serta larutan ekstrak etanolik daun binahong konsentrasi 10%, 20%, 40%, dan 80% diletakkan ke atas media MHA yang telah ditanami suspensi bakteri *P. gingivalis*. Pengujian membutuhkan masing-masing 5 sampel bahan uji. Pengukuran diameter zona hambat dilakukan setelah diinkubasi pada *anaerobic jar* suhu 37 °C selama 1x24 jam. Analisis hasil penelitian menggunakan Uji *one-way ANOVA* dan Uji *Post-hoc* metode *LSD*.

Rata-rata diameter zona hambat dari terbesar hingga terkecil berturut-turut adalah klorheksidin 0,2%, ekstrak etanolik daun binahong konsentrasi 80%, 40%, 20%, hingga 10%. Larutan DMSO 5% tidak menghasilkan daya hambat. Hasil analisis penelitian menunjukkan bahwa bahan uji berpengaruh terhadap diameter zona hambat dan menunjukkan adanya *dose-dependent* dengan perbedaan bermakna ($p < 0,05$) antar masing-masing kelompok. Kesimpulan penelitian ini adalah larutan ekstrak etanolik daun binahong memiliki potensi antibakteri terhadap pertumbuhan bakteri *P. gingivalis* (kajian *in vitro*).

Kata kunci: daun binahong, *Porphyromonas gingivalis*, antibakteri, zona hambat

ABSTRACT

Periodontitis is a disease affecting the tooth-supporting structure, which destructs alveolar bone and periodontal ligament. *Porphyromonas gingivalis* is a periodontitis pathogen bacteria due to its virulence factor that decreases phagocytosis leads to alveolar bone destruction. Binahong has a herbal derived antibacterial properties that inhibits *P. gingivalis* growth, because of its secondary metabolite components such as flavonoid, tannin, alkaloid, and saponin. This study aimed to investigate the antibacterial efficacy of binahong leaf ethanolic extract [*Anredera cordifolia* (ten.) steenis.] against *Porphyromonas gingivalis* bacterial growth (in vitro study).

Binahong leaf was macerated, and antibacterial activity was tested using disc diffusion method. Each initially immersed disc in chlorhexidine 0,2% as positive control, DMSO as negative control, and 10%, 20%, 40%, 80% binahong leaf ethanolic extract infusion were placed above MHA media that was previously cultured with *P. gingivalis* bacteria suspension. The test was carried out in five fold each groups. The inhibitory zone was measured after the 24 hour incubation process with anaerobic jar at 37 °C temperature. The research result was analyzed using one-way ANOVA test and Post-hoc test with LSD method.

Chlorhexidine 0,2% showed the biggest inhibitory zone diameter, followed by binahong leaf ethanolic extract with 80%, 40%, 20%, and 10% concentration respectively. Dimethyl sulfoxide (DMSO) 5% infusion did not produce any inhibitory effect. The research analysis result showed that the test material affected the inhibitory zone diameter and showed dose-dependent with significant difference ($p < 0,05$) among each groups. It can be concluded that binahong leaf ethanolic extract has antibacterial efficacy against *P. gingivalis* bacterial growth (in vitro study).

Keywords: binahong leaf, *Porphyromonas gingivalis*, antibacterial, inhibitory zone