

ABSTRAK

AKTIVITAS ANTIBAKTERI EKSTRAK ETANOL BIJI PEPAYA VARIETAS CALIFORNIA (*Carica papaya* L. var *Callina*) TERHADAP BAKTERI *Porphyromonas gingivalis*

Novia Zaenabun Rachmi Fatahudin

Periodontitis kronis merupakan peradangan pada jaringan periodontal akibat bakteri plak gigi yang didominasi oleh *Porphyromonas gingivalis*. Penanganan utama periodontitis kronis adalah perawatan *scaling* dan *root planing* dengan terapi tambahan obat kumur *chlorhexidine gluconate* (CHX) 0,2%. Pemberian CHX 0,2% memiliki beberapa efek samping pada penggunaan jangka panjang. Biji pepaya memiliki potensi sebagai alternatif terapi tambahan karena memiliki kandungan antibakteri, seperti alkaloid, flavonoid, senyawa fenolik, saponin dan tanin. Penelitian ini bertujuan untuk mengetahui aktivitas antibakteri ekstrak etanol biji pepaya varietas California (*Carica papaya* L. var *Callina*) terhadap *P. gingivalis*. Penelitian ini dilakukan secara eksperimental laboratoris dengan rancangan *posttest-only control group*. Ekstrak biji pepaya sebanyak 5 konsentrasi (3,125%, 6,25%, 12,5%, 25% dan 50%) dan kontrol positif CHX 0,2% serta kontrol negatif DMSO 1% diuji menggunakan metode mikrodilusi cair dengan pewarnaan *iodonitrotetrazolium chloride* (INT) untuk menentukan konsentrasi hambat minimum (KHM) dan metode *spread plate* untuk menentukan konsentrasi bunuh minimum (KBM). Analisis statistik menggunakan uji non-parametrik *Kruskall-Wallis* dan uji lanjutan *Mann-Whitney*. Hasil penelitian didapatkan bahwa KHM dan KBM terdapat pada konsentrasi 6,25%. Jumlah bakteri menurun seiring peningkatan pemberian ekstrak namun tidak terdapat perbedaan bermakna ($p > 0,05$) antara kelompok ekstrak konsentrasi 6,25%; 12,5%; 25%; 50%, dan kontrol positif CHX 0,2%. Simpulan dari penelitian ini adalah ekstrak etanol biji pepaya varietas California memiliki aktivitas antibakteri terhadap bakteri *Porphyromonas gingivalis*.

Kata kunci : Antibakteri, KHM, KBM, *Porphyromonas gingivalis*

ABSTRACT

ANTIBACTERIAL ACTIVITY OF PAPAYA SEEDS ETHANOL EXTRACT

CALIFORNIA VARIETY (*Carica papaya* L. var *Callina*)

AGAINST *Porphyromonas gingivalis*

Novia Zaenabun Rachmi Fatahudin

Chronic periodontitis is an inflammation of the periodontal tissue due to dental plaque bacteria which is dominated by Porphyromonas gingivalis. The main treatment is scaling and root planing with additional therapy of 0.2% chlorhexidine gluconate (CHX) mouthwash. Several side effects has founded in long-term use. Papaya seeds have potential as an alternative therapy for periodontitis because its antibacterial compounds, such as alkaloids, flavonoids, phenolic compounds, saponins and tannins. This study aims to determine antibacterial activity of the ethanol extract of California papaya seeds against Porphyromonas gingivalis. This research was conducted in an experimental laboratory with a post-test only control group design. Five concentrations of papaya seed extract (3.125%, 6.25%, 12.5%, 25% and 50%) with 0.2% CHX as positive control and DMSO 1% as negative control were tested using microdilution method with iodonitrotetrazolium chloride (INT) to determine the minimum inhibitory concentration (MIC) and a spread plate to determine the minimum killing concentration (MBC). Statistical analysis used nonparametric Kruskal-Wallis analysis and Mann-Whitney test. The results showed that MIC and MBC were present at a concentration of 6.25%. The number of bacteria decreased with increasing administration of the extract but there was no significant difference ($p>0.05$) between the 6.25% concentration extract group; 12.5%; 25%; 50%, and a positive control CHX 0.2%. The conclusion of this study is that the ethanol extract of California papaya seeds has antibacterial activity against Porphyromonas gingivalis bacteria.

.Keywords: Antibacterial, MIC, MBC, *Porphyromonas gingivalis*