

Efektivitas Antibakteri Fraksi Metanol dan N-heksan Daun Kemangi (*Ocimum basilicum*) Sebagai Bahan Medikamen Saluran Akar terhadap *Enterococcus Faecalis* ATCC 29212
Selvia Yunita 160421160008

ABSTRAK

Medikamen saluran akar berperan mengurangi *Enterococcus faecalis* yang merupakan salah satu bakteri penyebab kegagalan perawatan saluran akar. Bahan alam yang memiliki daya antibakteri dan berpotensi menjadi alternatif medikamen adalah daun kemangi (*Ocimum basilicum*). Tujuan penelitian untuk menganalisis efektivitas dan mengevaluasi perbedaan daya antibakteri fraksi metanol dan fraksi n-heksan daun kemangi terhadap *E. faecalis* ATCC 29212 secara *in vitro*.

Metode penelitian eksperimen laboratoris dengan rancangan penelitian eksperimental murni. Analisis statistik menggunakan uji t-test berpasangan independen. Uji efektivitas antibakteri fraksi metanol dan fraksi n-heksan terhadap *E. faecalis* meliputi analisis nilai zona hambat, Konsentrasi Hambat Minimum (KHM) dan Konsentrasi Bunuh Minimum (KBM).

Hasil penelitian rata-rata diameter zona hambat fraksi metanol, fraksi n-heksan daun kemangi dan $\text{Ca}(\text{OH})_2$ sebesar 10,35 mm; 8,75 mm dan 8,6 mm. KHM fraksi metanol dan fraksi n-heksan sebesar 1,25%. KBM fraksi metanol dan fraksi n-heksan sebesar 2,5%. Analisis statistik terhadap zona hambat adalah signifikan (*p-value* 1,80E-09). Analisis statistik terhadap KHM dan KBM adalah tidak signifikan (*p-value* 0,5). Jumlah koloni menurun pada kedua kelompok fraksi uji.

Simpulan penelitian yaitu fraksi metanol dan fraksi n-heksan daun kemangi (*Ocimum basilicum*) memiliki sensitivitas daya antibakteri terhadap *E. faecalis* ATCC 29212 dengan terbentuknya zona hambat secara *in vitro*; memiliki kemampuan menghambat pertumbuhan dan kemampuan membunuh *E. faecalis* ATCC 29212 secara *in vitro*. Terdapat penurunan jumlah koloni *E. faecalis* ATCC 29212 pada fraksi metanol dan fraksi n-heksan daun kemangi (*Ocimum basilicum*) secara *in vitro*. Tidak terdapat perbedaan efektivitas antibakteri antara fraksi metanol dan n-heksan daun kemangi (*Ocimum basilicum*) terhadap *E. faecalis* ATCC 29212 secara *in vitro*. Fraksi metanol dan n-heksan daun kemangi (*Ocimum basilicum*) memiliki efektivitas yang sama terhadap *E. faecalis* ATCC 29212 secara *in vitro*.

Kata kunci: Daun kemangi, fraksi metanol, fraksi n-heksan, medikamen saluran akar, *Enterococcus faecalis*.

Antibacterial Effectiveness of Methanol and N-hexane Fraction of Basil Leaf (Ocimum basilicum) as Medicament for Root Canal against Enterococcus Faecalis ATCC 29212
Selvia Yunita 160421160008

ABSTRACT

Medicinal root canal acts to reduce Enterococcus faecalis which is one of the bacteria that causes failure of root canal treatment. Natural ingredients that have antibacterial effect and have the potential to be an alternative medicament are basil leaves (Ocimum basilicum). The aim of the study was to analyze the effectiveness and evaluate the differences in the antibacterial effect of methanol fraction and the n-hexane fraction of basil leaves in E. faecalis ATCC 29212 in vitro.

Laboratory experimental research method with true experimental research design. Statistical analysis using independent paired t-test. The effectiveness test of the antibacterial of methanol fraction and n-hexane fraction on E. faecalis includes the analysis of inhibition zone, Minimum Inhibition Concentration (MIC) and Minimum Bactericidal Concentration (MBC).

The results of the study were the average inhibition zone diameter of the methanol fraction, basil and Ca(OH)₂ n-hexane fractions of 10.35 mm; 8.75 mm and 8.6 mm. MIC of methanol fraction and n-hexane fraction of 1.25%. MBC methanol fraction and n-hexane fraction of 2.5%. Statistical analysis of the inhibition zone is significant (p-value 1.80E-09). Statistical analysis of MIC and MBC is not significant (p-value 0.5). The number of colonies decreased in both test fraction groups.

The conclusions of the study were methanol fraction and basil leaf n-hexane fraction (Ocimum basilicum) which had antibacterial sensitivity to E. faecalis ATCC 29212 with the formation of inhibitory zones in vitro; has the ability to inhibit the growth and ability to kill E. faecalis ATCC 29212 in vitro. There was a decrease in the number of E. faecalis ATCC 29212 colonies in methanol fraction and the n-hexane fraction of basil (Ocimum basilicum) leaves in vitro. There was no difference in antibacterial effectiveness between the methanol fraction and n-hexane basil leaves (Ocimum basilicum) against E. faecalis ATCC 29212 in vitro. Methanol fraction and n-hexane basil leaves (Ocimum basilicum) have the same effectiveness on E. faecalis ATCC 29212 in vitro.

Keywords: *Basil leaves, methanol fraction, n-hexane fraction, root canal medicament, Enterococcus faecalis.*