

Efek antibakteri ekstrak larva *Chrysomya megacephala* terhadap *Enterococcus faecalis* sebagai alternatif bahan irigasi saluran akar
Antibacterial effect of *Chrysomya megacephala* larva extract on *Enterococcus faecalis* as a root canal irrigant alternative

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Abstract	<p>Pendahuluan: Desinfeksi saluran akar dilakukan dengan mengaplikasikan bahan irigasi saluran akar pada perawatan endodontik. Selama ini, natrium hipoklorit (NaOCl) menjadi protokol bahan irigasi saluran akar karena bersifat antimikroba. Penggunaan NaOCl memiliki kekurangan karena kurang adekuat dalam mengeliminasi bakteri persisten dalam saluran akar gigi, seperti <i>Enterococcus faecalis</i>. Upaya pengeliminasian <i>E. faecalis</i> yang dapat dilakukan yakni dengan mengkombinasikan NaOCl dengan bahan irigasi lain atau menggunakan bahan alternatif lain. Salah satu bahan alam yang memiliki efek antibakteri adalah ekstrak larva dari lalat hijau (<i>Chrysomya megacephala</i>). Produk eksretori dan sekretori larva instar ke-3 <i>C. megacephala</i> mengandung protease serin yang memiliki efek antibakteri. Tujuan penelitian untuk menganalisis efek antibakteri ekstrak larva <i>C. megacephala</i> dalam menghambat pertumbuhan <i>E. faecalis</i>. Metode: Jenis penelitian eksperimental laboratorium. Ekstrak larva <i>C. megacephala</i> dibuat dengan konsentrasi 0-100%. Efek antibakteri diketahui dengan pengukuran nilai Minimal Inhibitory Concentration (MIC) dan Minimal Bactericidal Concentration (MBC). Nilai MIC diukur dengan metode pengenceran microbroth dalam cawan microtiter 96-well. Nilai MBC diukur dari hasil pengukuran MIC yang di-plating pada media kultur Mueller Hinton Agar (MHA) dengan metode total counting. Hasil: Nilai MIC diperoleh pada ekstrak larva 50% ($0,5 \times 10^6$ mg/L) ($p > 0,05$) sedangkan nilai MBC tidak ditemukan. Simpulan: Ekstrak larva <i>C. Megacephala</i> tidak memiliki efek yang dapat menghambat pertumbuhan <i>Enterococcus faecalis</i>. Kata kunci: Antibakteri, natrium hipoklorit, <i>Chrysomya megacephala</i>, <i>Enterococcus faecalis</i>.</p> <p>ABSTRACT Introduction: In endodontic treatment, the root canal is disinfected by applying root canal irrigant. Commonly, sodium hypochlorite (NaOCl) is used as the protocol of the root canal irrigant due to its antimicrobial effects. The usage of NaOCl has limitation because it is inadequate in eliminating persistent bacteria in the root canal, such as <i>Enterococcus faecalis</i>. The effort to eliminate <i>E. faecalis</i> is by combining NaOCl with other irrigant or using an alternative material. One of the natural products with antibacterial effects is the larva extract of greenfly (<i>Chrysomya megacephala</i>). The excretory and secretory products of the third instar of the larva contain serine protease that has been known for the antibacterial effects. The purpose of this study was to analyse the antibacterial effect of <i>Chrysomya megacephala</i> larva extract in inhibiting the <i>E. faecalis</i> bacteria. Methods: Experimental laboratory research was conducted towards an extract of <i>C. megacephala</i> larva, which was prepared with a concentration of 0-100%. The antibacterial effect was determined by measuring the value of Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC). The MIC values were measured by the micro broth dilution method in a 96-well microtiter dish. The MBC value was measured from the results of the MIC measurement plated on the Mueller Hinton Agar (MHA) culture media using the total counting method. Results: The MIC values obtained in 50% larva extract was 0.5×10^6 mg / L ($p > 0.05$) while the MBC value was not found. Conclusion: <i>Chrysomya megacephala</i> larva extract does not have the effect in inhibiting the <i>Enterococcus faecalis</i>. Keywords: Antibacterial, sodium hypochlorite, <i>Chrysomya megacephala</i>, <i>Enterococcus faecalis</i>.</p>
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