

# Efek antibakteri ekstrak jintan putih *Cuminum cyminum* terhadap biofilm *E. Faecalis* isolat klinis eksperimental laboratorik = Antibacterial effect of cumin extract *Cuminum cyminum* against biofilm of *E-Faecalis* from clinical isolates

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Abstrak

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Latar Belakang: *E. faecalis* merupakan bakteri yang sulit dieliminasi sehingga dapat menyebabkan kegagalan perawatan endodontik. Klorheksidin 2 merupakan bahan irigasi yang sudah terbukti efektif dalam mengeliminasi *E. faecalis*, namun memiliki toksisitas terhadap sel-sel yang sehat. Ekstrak jintan putih *Cuminum cyminum* memiliki potensi efektivitas antibakteri. Namun, belum terdapat penelitian yang meneliti efek antibakteri ekstrak jintan putih terhadap biofilm *E. faecalis* dari isolat klinis. Tujuan: Mengetahui efek antibakteri ekstrak jintan putih konsentrasi 0,2 mg/ml, 0,5 mg/ml, 0,7 mg/ml, 1,0 mg/ml, dan 1,2 mg/ml dibandingkan dengan klorheksidin 2 terhadap biofilm *E. faecalis* dari isolat klinis. Metode: Menilai kekeruhan larutan biofilm *E. faecalis* pasca pemaparan bahan uji dengan ELISA reader, dengan hasil akhir berupa nilai optical density OD. Hasil: Terdapat perbedaan efek antibakteri yang bermakna antara ekstrak jintan putih dengan klorheksidin 2 terhadap biofilm *E. faecalis* dari isolat klinis  $p < 0,05$ . Kesimpulan: Efek antibakteri ekstrak jintan putih konsentrasi 1,0 mg/ml lebih baik dibandingkan dengan klorheksidin 2 terhadap biofilm *E. faecalis* dari isolat klinis.

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**ABSTRACT**

Introduction *E. faecalis* is a bacteria that is difficult to eliminate which can lead to failure of endodontic treatment. Chlorhexidine 2 is an endodontic irrigation material that has been proven to be effective against *E. faecalis*, but has toxicity to healthy cells. The extract of cumin *Cuminum cyminum* has the potential antibacterial activity. However, there have been no research investigating the antibacterial effect of *Cuminum cyminum* extract on *E. faecalis* biofilm from clinical isolates. Aims To compare antibacterial efficacy of *Cuminum cyminum* extract 0,2 mg ml, 0,5 mg ml, 0,7 mg ml, 1,0 mg ml, and 1,2 mg ml and 2 chlorhexidine against *E. faecalis* biofilm from clinical isolates. Methods Assessing the turbidity of *E. faecalis* in biofilm after immersed in antibacterial agents with ELISA reader, with optical density OD as the final result. Results There were significant differences statistically between *Cuminum cyminum* extract and 2 chlorhexidine against *E. faecalis* biofilm from clinical isolates  $p 0.05$ . Conclusion Antibacterial effect of 1,0 mg ml *Cuminum cyminum* extract was more effective than 2 chlorhexidine against *E. faecalis* biofilm from clinical isolates.