ABSTRAK

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Judul Skripsi : Uji Efek Antibakteri Ekstrak Etanol Centella asiatica dalam Menghambat Pertumbuhan Bakteri *Streptococcus mutans* ATTC 31987-1

Latar Belakang: Karies gigi merupakan masalah kesehatan dengan prevalensi tinggi yang berkaitan dengan aktivitas *Streptococcus mutans*. Pemanfaatan bahan alam seperti *Centella asiatica* (pegagan), yang mengandung flavonoid, alkaloid, tanin, dan saponin, berpotensi sebagai alternatif antibakteri dan sejalan dengan prinsip Islam dalam menjaga kesehatan sebagai amanah. **Tujuan**: Penelitian ini bertujuan menilai efektivitas ekstrak etanol *Centella asiatica* dalam menghambat pertumbuhan *Streptococcus mutans* ATTC-3198-7 dan mengidentifikasi kandungan fitokimia ekstrak secara *in vitro* serta pandangan Islam mengenai ekstrak etanol *Centella asiatica* sebagai antibakteri dalam menghambat pertumbuhan *Streptococcus mutans.* **Metode:** Uji antibakteri dilakukan dengan metode difusi cakram pada media Mueller–Hinton Agar dengan konsentrasi ekstrak 10%, 20%, 40%, 60%, 80%, dan 100%, disertai kontrol positif klorheksidin dan kontrol negatif. Diameter zona hambat diukur setelah inkubasi 24 jam pada 37°C. **Hasil:** Ekstrak positif mengandung flavonoid, alkaloid, tanin, dan saponin. Semua konsentrasi menghambat *Streptococcus mutans*, dengan median terbesar pada 80% dan kategori kuat–sangat kuat. Uji Kruskal–Wallis tidak signifikan ($p=0,089$), namun Mann–Whitney menunjukkan perbedaan pada beberapa kelompok ($p\leq0,05$). **Kesimpulan :** Ekstrak etanol *Centella asiatica* efektif secara biologis dalam menghambat pertumbuhan *Streptococcus mutans*, meskipun secara statistik belum setara dengan klorheksidin, sehingga masih diperlukan penelitian lanjutan menggunakan metode MIC dan MBC. Dalam perspektif Islam, penelitian ini merupakan bentuk ikhtiar ilmiah dalam menjaga kesehatan gigi dan mulut sebagai amanah Allah SWT melalui upaya preventif dan pemanfaatan bahan alam yang aman serta bertanggung jawab.

Kata kunci: *Centella asiatica*; *Streptococcus mutans*; antibakteri; zona hambat; uji fitokimia.

ABSTRACT

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Introduction: *Dental caries is mainly caused by Streptococcus mutans, which produces acids and biofilms that demineralize enamel. Centella asiatica contains bioactive compounds with potential antibacterial effects and may serve as a natural alternative for caries prevention, aligned with the Islamic principle of preserving health as an amanah.* ***Objective:*** *This study aims to evaluate the effectiveness of the ethanol extract of Centella asiatica in inhibiting the growth of Streptococcus mutans ATCC-3198-7 and to identify the phytochemical constituents of the extract through in vitro analysis, as well as to explore the Islamic perspective regarding the use of Centella asiatica ethanol extract as an antibacterial agent in inhibiting the growth of Streptococcus mutans.* ***Methods:*** *Antibacterial activity was assessed using the disc diffusion method on Mueller–Hinton Agar with extract concentrations of 10%, 20%, 40%, 60%, 80%, and 100%, along with chlorhexidine as a positive control and a negative control. Inhibition zone diameters were measured after 24 hours of incubation at 37°C.* ***Results:*** *The extract contained flavonoids, alkaloids, tannins, and saponins. All concentrations inhibited S. mutans, with the largest median inhibition at 80%. Activity was classified as strong to very strong. Kruskal–Wallis showed no significant difference ($p=0.089$), but Mann–Whitney revealed significant differences in several comparisons ($p\leq0.05$).* ***Conclusion*** *: The ethanol extract of Centella asiatica is biologically effective in inhibiting the growth of Streptococcus mutans; however, statistically, it has not yet shown equivalence to chlorhexidine. Therefore, further studies using MIC (Minimum Inhibitory Concentration) and MBC (Minimum Bactericidal Concentration) methods are still required. From an Islamic perspective, this research represents a form of scientific endeavor (ikhtiar) in maintaining oral and dental health as a trust (amanah) from Allah SWT, through preventive efforts and the responsible and safe utilization of natural resources.*

Keywords: *Centella asiatica; Streptococcus mutans; antibacterial activity; inhibition zone; phytochemical screening.*