

Potensi Ekstrak Etanol Daun *Centella asiatica* Sebagai Antimikroba Terhadap *Streptococcus pyogenes* ATCC 19615 = Potential of Ethanol Extract of *Centella asiatica* Leaves as Antimicrobial against *Streptococcus pyogenes* ATCC 19615

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Abstrak

Latar Belakang *Streptococcus pyogenes* (*S. pyogenes*) adalah bakteri penyebab berbagai penyakit, mulai dari faringitis, pioderma, serta penyakit pasca *Streptococcus* seperti demam rematik dan glomerulonefritis. Penelitian sebelumnya menunjukkan bahwa beberapa strain *S. pyogenes* telah resisten terhadap beberapa antibiotik sehingga diperlukan terapi baru. *Centella asiatica* (*C. asiatica*) adalah tanaman herbal yang berpotensi menghambat pertumbuhan berbagai bakteri. Penelitian ini bertujuan untuk mengukur Minimum Inhibitory Concentration (MIC) dari ekstrak etanol 70% *C. asiatica* terhadap *S. pyogenes* untuk mengevaluasi potensinya sebagai agen antibakteri. Metode Nilai Minimum Inhibitory Concentration (MIC) diukur menggunakan metode broth dilution dimana pada 10 tabung akan ditambahkan berbagai konsentrasi ekstrak *C. asiatica* mulai dari 750 hingga 1,46 mg/ml. Setelah penambahan 1 l *S. pyogenes* dengan kekeruhan McFarland 0,5, tabung-tabung tersebut diinkubasi selama 24 jam pada suhu 35°C. Kekeruhan tabung kemudian diamati; kaldu yang tetap jernih menandakan terhambatnya pertumbuhan bakteri, sedangkan kaldu yang keruh menandakan adanya pertumbuhan bakteri. Minimum Inhibitory Concentration (MIC) adalah konsentrasi ekstrak terendah yang dapat menghambat pertumbuhan bakteri. Hasil MIC ditemukan pada konsentrasi 375 mg/ml, yang merupakan konsentrasi ekstrak terendah yang efektif menghambat pertumbuhan *S. pyogenes*. Pada konsentrasi yang lebih rendah, tabung tetap terlihat keruh. Hasil ini konsisten dalam tiga percobaan terpisah, yang semuanya dilakukan secara duplo. Kesimpulan Penelitian ini menemukan bahwa ekstrak etanol 70% dari daun *C. asiatica* memiliki sifat antibakteri terhadap *S. pyogenes* pada konsentrasi 375 mg/ml.

.....Introduction *Streptococcus pyogenes* (*S. pyogenes*) can cause various infections, from pharyngitis, pyoderma, and post-streptococcal diseases such as rheumatic fever and glomerulonephritis. Previous studies have shown that some strains of *S. pyogenes* have become resistant to several antibiotics, requiring new therapies. *Centella asiatica* (*C. asiatica*) is an herbal plant that has the potential to inhibit the growth of various bacteria. This study aims to measure the Minimum Inhibitory Concentration (MIC) of 70% ethanol extract of *C. asiatica* against *S. pyogenes* to evaluate its potential as an antibacterial agent. Method The Minimum Inhibitory Concentration (MIC) value was measured using the broth dilution method where 10 tubes were added with various concentrations of *C. asiatica* extract ranging from 750 to 1.46 mg/ml. After the addition of 1 l of *S. pyogenes* with a McFarland turbidity of 0.5, the tubes were incubated for 24 hours at 35°C. The turbidity of the tubes was then observed; broth that remained clear indicated inhibition of bacterial growth, while turbid broth indicated bacterial growth. Minimum Inhibitory Concentration (MIC) is the lowest concentration of extract that can inhibit bacterial growth. Results The MIC was found at a concentration of 375 mg/ml, which is the lowest concentration of extract that effectively inhibits the growth of *S. pyogenes*. At lower concentrations, the tubes remained cloudy. These results were consistent across three separate experiments, all of which were performed in duplicate. Conclusion This study found that 70%

ethanol extract of *C. asiatica* leaves has antibacterial properties against *S. pyogenes* at a concentration of 375 mg/ml.