Potensi aktivitas antibakteri ekstrak jinten hitam nigella sativa linn terhadap streptococcus pyogenes = Antibacterial activity potency of black cumin extract nigella sativa linn against streptococcus pyogenes

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Abstrak

Pendahuluan: Penyakit menular di Indonesia masih menjadi permasalahan utama. Salah satu etiologi ISPA tersering ialah Streptococcus pyogenes. Seiring meningkatnya angka resistensi bakteri terhadap antibiotik lini utama, ekstrak Nigella sativa Linn. dikembangkan sebagai alternatif terapi. Biji jintan hitam (Nigella sativa Linn.) dipercaya memiliki potensi efek antibakteri. Penelitian ini ditujukan untuk mengetahui potensi aktivitas antibakteri dari ekstrak Nigella sativa Linn.
Metode: Percobaan dilakukan di Departemen Mikrobiologi Klinik FKUI. Potensi aktivitas antibakteri diamati melalui tiga percobaan. Percobaan pertama menggunakan lima konsentrasi berbeda yakni 200 mg/mL, 100 mg/mL, 50 mg/mL, 25 mg/mL, 12,5 mg/mL. Percobaan kedua dan ketiga menggunakan lima konsentrasi lain, yakni 1000 mg/mL, 500 mg/mL, 250 mg/mL, 125 mg/mL dan 62,5 mg/mL. Ekstrak kemudian diuji secara in vitro dengan metode difusi cara sumuran, dibandingkan dengan antibiotik amoksisilin 10 ug/mL sebagai kontrol positif dan larutan akuades sebagai kontrol negatif. Setiap percobaan dilakukan dengan empat kali pengulangan.
Hasil: Tidak terdapat zona hambat pada sumuran ekstrak Nigella sativa Linn. Hasil ini berbeda dengan penelitian sebelumnya yang menunjukkan ekstrak Nigella sativa Linn. memiliki aktivitas antibakteri terhadap S. Pyogenes. Beberapa faktor yang berpotensi memengaruhi hasil penelitian ialah penggunaan pelarut ekstrak, sifat dari bahan dasar biji jintan hitam, serta metode uji.
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Introduction: Infectious diseases in Indonesia are still a major problem. One of the most common etiology of respiratory infection is Streptococcus pyogenes. Several studies have shown an increase of antibiotic resistance for treatment of Streptococcus pyogenes, extracts of Nigella sativa Linn. was developed as an alternative therapy. Black cumin seeds (Nigella sativa Linn.) is believed to have the potential antibacterial effect. This study aimed to determine the potential antibacterial activity of extracts of Nigella sativa Linn.
Methods: Experiments were performed at the Department of Clinical Microbiology, Faculty of Medicine Universitas Indonesia. Potential antibacterial activity was observed through three experiments. The first experiments using five different concentrations of the 200 mg/mL, 100 mg/mL, 50 mg/mL, 25 mg/mL, 12.5 mg/mL. The second and third experiments using five different concentrations, 1000 mg/mL, 500 mg/mL, 250 mg/mL, 125 mg/mL and 62.5 mg/mL. Extracts were then tested in vitro using agar well plate method, compared with the antibiotic amoxicillin 10 ug/mL as a positive control and aquades as a negative control. Each experiment was tested with four repetitions.
Results: There was no inhibition zone on extracts of Nigella sativa Linn. These results differ from previous studies that showed antibacterial activity of Nigella sativa Linn. Some of the factors that could potentially influence the outcome of research is the use of solvent extract, the nature of the basic ingredients of black cumin seeds, as well as test methods.