

Efek antibakterial ekstrak etanol 70% daun delonix regia terhadap pertumbuhan bakteri penyebab infeksi saluran kemih secara in vitro = Antibacterial effect of 70 ethanolic extract of delonix regia leaf against urinary tract pathogens in vitro

Muhammad Insan Kharis, author

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Abstrak

Infeksi saluran kemih (ISK) merupakan infeksi yang cukup sering terjadi, terutama pada pasien-pasien anak dan geriatri, wanita, serta pasien-pasien rawat inap di rumah sakit. Walaupun ISK seringkali dapat diterapi dengan antibiotik, diketahui terdapat masalah resistensi kuman ISK yang cukup tinggi terhadap antibiotik ampisilin, kotrimoksazol, dan kloramfenikol di Indonesia serta di negara-negara berkembang lainnya. Dalam penelitian ini, dilakukan uji disc-diffusion untuk mengidentifikasi efek antibakterial ekstrak etanol 70% daun Delonix regia terhadap pertumbuhan dua spesies bakteri Gram-negatif yang paling sering menyebabkan ISK, Escherichia coli dan Proteus mirabilis. Daun Delonix regia yang telah dikeringkan diekstrak dengan pelarut etanol 70%. Kemudian, ekstrak diencerkan empat kali dalam brain-heart infusion, menghasilkan ekstrak cair dengan kandungan 64 mg/mL, 32 mg/mL, 16 mg/mL, dan 8 mg/mL dan diteteskan ke atas disc kosong. Selanjutnya, zona hambat yang terbentuk pada biakan-biakan Escherichia coli dan Proteus mirabilis dihitung dengan jangka sorong. Dilakukan pengulangan sebanyak tiga kali. Tidak terbentuk zona hambat di sekitar disc yang mengandung ekstrak daun Delonix regia. Dua faktor utama yang kemungkinan mempengaruhi hasil penelitian adalah jenis pelarut dan konsentrasi ekstrak yang digunakan. Selain itu, target molekular zat aktif yang diekspresikan oleh kedua spesies bakteri coba serta jenis produk Delonix regia yang digunakan mungkin turut berpengaruh pada hasil penelitian.

.....Urinary tract infections (UTIs) are common infections among children, geriatrics, women of all ages, and hospital inpatients. While UTIs can be successfully treated with antibiotics, it is currently known that there are high levels of antibiotic resistance to ampicillin, co-trimoxazole, and chloramphenicol among UTI pathogens in Indonesia and other developing countries. In this study, antimicrobial susceptibility testing using disc-diffusion method was performed to identify the antibacterial activity of 70% ethanolic extract of Delonix regia leaf against two common UTI pathogens, Escherichia coli and Proteus mirabilis. Dry Delonix regia leaves were extracted in 70% ethanolic solvent. It was then diluted four times in brain-heart infusion, giving four solutions with extract concentrations of 64 mg/mL, 32 mg/mL, 16 mg/mL, and 8 mg/mL. Afterward, the zones of inhibition formed on agar plates with Escherichia coli and Proteus mirabilis colonies were measured using vernier scale. This method was repeated three times. No evident zone of inhibition was formed around discs containing Delonix regia extract of all concentrations. Two main factors probably affecting the results of this study are extract solvent and concentrations used. Other factors, such as molecular targets expressed by both species of bacteria and products of Delonix regia likely play minor roles.