

**UJI FITOKIMIA DAN ANTIBAKTERI EKSTRAK ETIL
ASETAT BAKTERI RIZOSFER *Orthosiphon stamineus* DARI MEDIA FERMENTASI
CAIR *Ipomoea batatas***

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Abstract

Whiskers (*Orthosiphon stamineus*) have high pharmacological potential supported by the activity of secondary metabolites produced by rhizosphere bacteria that are symbiotic with the plant. This study aims to identify the content of secondary metabolites through phytochemical tests and the antibacterial activity of the ethyl acetate extract of the supernatant of rhizosphere bacterial isolates of cat's whiskers against *Staphylococcus aureus*. The research method includes aerobic fermentation of rhizosphere bacterial isolates with the code RKK-2 and RKK-3. The fermentation supernatant is extracted using ethyl acetate solvent. Phytochemical tests are carried out to determine the presence of secondary metabolite compounds including alkaloids, flavonoids, saponins, tannins, and terpenoids. Antibacterial activity tests are carried out using the disc diffusion method on Mueller-Hinton Agar media against *Staphylococcus aureus* bacteria with amoxicillin as a positive control. The results show that the ethyl acetate extract of the supernatant of isolates RKK-2 and RKK-3 only contain terpenoid compounds. Furthermore, the extract demonstrated antibacterial activity, as indicated by the formation of clear zones with a diameter of 6.9 mm for isolate RKK-2 and 7.4 mm for isolate RKK-3. Further research is recommended to isolate and identify the active compounds more specifically, test their antibacterial activity against other pathogenic bacteria, and develop variations in extract concentration.

Keywords: Antibacterial, rhizosphere bacteria, cat's whiskers, secondary metabolites, *Staphylococcus aureus*, terpenoids.

Abstrak

Tanaman kumis kucing (*Orthosiphon stamineus*) memiliki potensi farmakologis yang tinggi yang di dukung oleh aktivitas metabolit sekunder yang dihasilkan oleh bakteri rizosfer yang bersimbiosis dengan tanaman tersebut. Penelitian ini bertujuan untuk mengidentifikasi kandungan metabolit sekunder melalui uji fitokimia serta aktivitas antibakteri dari ekstrak etil asetat supernatan isolat bakteri rizosfer tanaman kumis kucing terhadap *Staphylococcus aureus*. Metode penelitian meliputi fermentasi aerob isolat bakteri rizosfer dengan kode RKK-2 dan RKK-3, Supernatan hasil fermentasi diekstraksi menggunakan pelarut etil asetat. Uji fitokimia dilakukan untuk mengetahui keberadaan senyawa metabolit sekunder yang meliputi uji alkaloid, flavonoid, saponin, tanin, dan terpenoid. Uji aktivitas antibakteri dilakukan menggunakan metode difusi cakram pada media Mueller-Hinton Agar terhadap bakteri *Staphylococcus aureus* dengan amoksisilin sebagai kontrol positif. Hasil penelitian menunjukkan bahwa ekstrak etil

asetat supernatan isolat RKK-2 dan RKK-3 hanya positif mengandung senyawa golongan terpenoid. Selain itu, ekstrak tersebut menunjukkan aktivitas antibakteri yang ditandai dengan terbentuknya zona bening dengan diameter isolat RKK-2 sebesar 6,9 mm dan RKK-3 sebesar 7,4 mm. Penelitian selanjutnya disarankan untuk melakukan isolasi dan identifikasi senyawa aktif secara lebih spesifik, menguji aktivitas antibakteri terhadap bakteri patogen lain, serta mengembangkan variasi konsentrasi ekstrak.

Kata Kunci: Antibakteri, bakteri rizosfer, kumis kucing, metabolit sekunder, *Staphylococcus aureus*, terpenoid



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