

**ISOLASI DAN UJI ANTIBAKTERI FRAKSI ETIL ASETAT AKAR TANAMAN
AKAR PURWO (*Eryngium foetidum*) TERHADAP
Staphylococcus aureus ATCC 25923 DAN *Escherichia coli* ATCC 25922**

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RINGKASAN

Tanaman Indonesia telah dimanfaatkan dalam bidang kesehatan sebagai obat tradisional, salah satunya adalah akar purwo (*Eryngium foetidum*) yang dapat mengobati sakit panas dingin, diare, flu, diabetes, sembelit dan demam malaria. Penelitian ini bertujuan untuk mengisolasi senyawa aktif dan usaha menentukan strukturnya serta menentukan aktivitas antibakteri fraksi etil asetat terhadap *Escherichia coli* ATCC 25922 dan *Staphylococcus aureus* ATCC 25923 akar tanaman akar purwo.

Penelitian ini dibagi dalam dua tahap. Tahap pertama adalah pemisahan, pemurnian dan penentuan struktur padatan dalam fraksi etil asetat. Tahap ini dilakukan dengan proses kromatografi lapis tipis (KLT), pencucian dengan berbagai pelarut seperti etil asetat, metilen klorida, kloroform, metanol, aseton dan eter, dan penentuan struktur padatan dengan spektroskopi UV-Vis dan FTIR. Tahap kedua adalah uji antibakteri fraksi etil asetat. Penentuan aktivitas antibakteri terhadap *E. coli* ATCC 25922 dan *S. aureus* ATCC 25923 menggunakan metode cakram kertas.

Hasil penelitian diperoleh padatan yang berwarna putih kecoklatan, larut dalam metanol dan eter serta tidak larut dalam etil asetat, metilen klorida, kloroform dan aseton. Titik leleh padatan ini adalah 163-165⁰C. Berdasarkan hasil analisis spektroskopi UV-Vis dan FTIR, diperkirakan padatan merupakan senyawa yang mengandung ikatan rangkap C=C alkena alifatik dan aromatik, gugus C=O karbonil, gugus C-O-C ester, gugus metilen serta gugus metil. Secara keseluruhan struktur padatan belum dapat ditentukan secara pasti. Uji antibakteri menunjukkan bahwa fraksi etil asetat akar tanaman akar purwo mampu berperan sebagai antibakteri. Pada konsentrasi 10% (v/v) bersifat bakteriostatik dan pada konsentrasi 15% (v/v) bersifat bakterisidik terhadap *E. coli* ATCC 25922 dan *S. aureus* ATCC 25923.

SUMMARY

Indonesian plants had been used in healthy field as traditional medicines, one of them is akar purwo (*Eryngium foetidum*), which can be used to treat fevers and chills, diarrhea, flu, diabetes, constipation, and malaria fever. This research was done to isolate the active component and to determine the structure along with efforts to determine the antibacterial activity of ethyl acetate fraction from akar purwo root's to *Escherichia coli* ATCC 25922 and *Staphylococcus aureus* ATCC 25923.

This research comprised into two steps. The first step was isolation, purifying, and determining the structure of solid matter in ethyl acetate fraction. This step was done with thin layer chromatography (TLC), washed with many solvents, such ethyl acetate, methylene chloride, chloroform, methanol, acetone, and ether, and determine the structure of solid matter with spectroscopic UV-Vis and FTIR. The second step was antibacterial test of ethyl acetate fraction. The determination of antibacterial activity towards *E. coli* ATCC 25922 and *S. aureus* ATCC 25923 was tested with paper disc method.

The research resulted a solid compound with white creamy color, which was soluble in methanol and ether and insoluble in ethyl acetate, methylene chloride, chloroform, acetone as well. The melting point of this solid was 163-165⁰C. According to results of UV-Vis and FTIR spectroscopic analysis, it was estimated that the compound contained alkenes C=C double bonds, C=O carbonyl, C-O-C ester, methylene, and methyl. All solid structure had not been certainly determined yet. The antibacterial test showed that ethyl acetate fraction of akar purwo root's can be used as antibacterial role. In core of 10% (v/v) characteristic for bacteriostatic and in 15% core had characteristic for bacteriosidic towards *E. coli* ATCC 25922 and *S. aureus* ATCC 25923

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