

**UJI AKTIVITAS ANTIBAKTERI EKSTRAK DAUN DAN BUNGA
LAVENDER (*Lavandula angustifolia*) TERHADAP BAKTERI
STAPHYLOCOCCUS AUREUS DAN *ESCHERICHIA COLI* SECARA IN
VITRO MENGGUNAKAN METODE MIKRODILUSI**

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ABSTRAK

Lavender (*Lavandula angustifolia*) diketahui mengandung metabolit sekunder seperti flavonoid, tanin, fenol, dan saponin yang berpotensi sebagai antibakteri. Penelitian ini bertujuan untuk menilai aktivitas antibakteri dari ekstrak daun dan bunga lavender terhadap bakteri *Staphylococcus aureus* (gram positif) dan *Escherichia coli* (gram negatif) secara in vitro. Ekstraksi dilakukan secara bertingkat dengan menggunakan pelarut n-heksan, etil asetat, dan metanol dengan metode refluks. Uji aktivitas antibakteri dilakukan menggunakan metode difusi cakram dan mikrodilusi untuk menentukan Konsentrasi Hambat Minimum (KHM) dan Konsentrasi Bunuh Minimum (KBM). Hasil menunjukkan bahwa ekstrak metanol bunga lavender memiliki aktivitas antibakteri paling tinggi terhadap *E. Coli* dan *S. Aureus*, dengan zona hambat masing-masing 12,6 mm dan 14 mm pada konsentrasi 10%. KHM terendah terhadap *E. Coli* dan *S. Aureus* ditunjukkan oleh ekstrak etil asetat bunga pada konsentrasi 0,625%. Nilai KBM terendah terhadap *E. Coli* ditunjukkan oleh ekstrak metanol bunga pada konsentrasi 2,5%, terhadap bakteri *S. Aureus* ditunjukkan oleh ekstrak n-heksan daun pada konsentrasi 2,5%. Uji KLT bioautografi menunjukkan golongan senyawa flavonoid yang membentuk zona hambat terhadap pertumbuhan bakteri *E. Coli* dan *S. Aureus*.

Skrining fitokimia menunjukkan keberadaan senyawa flavonoid, fenol, saponin, dan steroid/triterpenoid. Hasil penelitian menunjukkan potensi ekstrak daun dan bunga lavender sebagai antibakteri alami terhadap bakteri patogen.

Kata kunci: *Lavandula angustifolia*, antibakteri, *Staphylococcus aureus*, *Escherichia coli*.

**ANTIBACTERIAL ACTIVITY TEST OF LAVENDER LEAF AND
FLOWER EXTRACTS (*Lavandula angustifolia*) AGAINST
STAPHYLOCOCCUS AUREUS AND *ESCHERICHIA COLI* BACTERIA IN
VITRO USING THE MICRODILUTION METHOD**

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ABSTRACT

Lavender (*Lavandula angustifolia*) is known to contain secondary metabolites such as flavonoids, tannins, phenols, and saponins, which have potential antibacterial properties. This study aims to evaluate the antibacterial activity of lavender leaf and flower extracts against *Staphylococcus aureus* (gram positive) and *Escherichia coli* (gram negative) bacteria in vitro. Extraction was performed in stages using n-hexane, ethyl acetate, and methanol solvents via the reflux method. Antibacterial activity testing was conducted using the disk diffusion and microdilution methods to determine the Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC). The results showed that the methanol extract of lavender flowers had the highest antibacterial activity against *E. Coli* and *S. Aureus*, with inhibition zones of 12,6 mm and 14 mm, respectively, at a concentration of 10%. The lowest MIC against *E. Coli* and *S. Aureus* was demonstrated by the ethyl acetate extract of flowers at a concentration of 0,625%. The lowest MIC value against *E. Coli* was shown by the methanol extract of flowers at a concentration of 2,5%, while against *S. Aureus* it was shown by the n-hexane extract of leaves at a concentration of 2,5%. Bioautography TLC testing indicated the presence of flavonoid compounds forming inhibition zones against the growth of *E. Coli* and *S. Aureus* bacteria.

Phytochemical screening revealed the presence of flavonoids, phenols, saponins, and steroids/triterpenoids. The study results indicate the potential of lavender leaf and flower extracts as natural antibacterial agents against pathogenic bacteria.

Keywords: *Lavandula angustifolia*, antibacterial, *Staphylococcus aureus*, *Escherichia coli*.