

ABSTRACT

The potential of jeruju (*Acanthus ilicifolius*) as a natural antibacterial agent remains underexplored. This study aimed to analyze the phytochemical profile and antibacterial activity of *Acanthus ilicifolius* leaf extract against *Escherichia coli*. The study employed a Completely Randomized Design (CRD) with a Post-Test Only Control Group Design. Extraction was carried out using the maceration method with 70% ethanol as the solvent. Antibacterial activity was evaluated using the Kirby–Bauer disk diffusion method at concentrations of 0.5 ppm, 1 ppm, 1.5 ppm, and 2 ppm, while the minimum inhibitory concentration (MIC) was determined using the microdilution method. Data were analyzed using one-way ANOVA followed by Duncan's multiple range test. Phytochemical screening revealed that *A. ilicifolius* leaf extract was positive for alkaloids, flavonoids, saponins, and tannins. The inhibitory activity of the ethanolic leaf extract differed significantly among concentrations. The mean inhibition zones at concentrations of 0.5 ppm, 1 ppm, 1.5 ppm, and 2 ppm were 1.58 mm, 4.21 mm, 5.92 mm, and 9.61 mm, respectively. The lowest concentration capable of inhibiting *Escherichia coli* growth (MIC) was 0.25 ppm. These findings suggest that *Acanthus ilicifolius* has promising potential for development as a raw material for herbal antibacterial agents.

Keywords: *Acanthus ilicifolius*; antibacterial activity; *Escherichia coli*