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ABSTRACT

Background: *Escherichia coli* is a Gram-negative bacterium frequently causing urinary tract infections and diarrhea, with increasing global antibiotic resistance challenges. This necessitates alternative antibacterial agents from natural sources such as Meniran (*Phyllanthus niruri* L.), which contains bioactive compounds like flavonoids, tannins, saponins, and phyllanthin. **Objective:** To determine the antibacterial effectiveness of meniran leaf extract against the growth of *Escherichia coli* in vitro at various concentrations. **Methods:** This study was an experimental laboratory study with a post-test only control group design using the disc diffusion method (Kirby-Bauer). The ethanolic extract of meniran leaves was tested at concentrations of 25%, 50%, 75%, and 100%. The diameter of inhibition zones was measured after incubation to determine its effectiveness. **Results:** The results showed that the ethanolic extract of meniran leaves was effective in inhibiting the growth of *Escherichia coli* at all tested concentrations. The optimal antibacterial activity was found at a concentration of 100%, which produced the largest inhibition zone diameter compared to 25%, 50%, and 75% concentrations. There was a direct correlation between increasing extract concentration and the size of the inhibition zone (*dose-dependent*). **Conclusion:** The ethanolic extract of meniran leaves (*Phyllanthus niruri* L.) is proven effective in inhibiting the growth of *Escherichia coli* in vitro, with optimal activity at a 100% concentration. Theologically, these findings confirm the Quranic signs (QS. As-Syu'ara: 7-8) regarding the existence of beneficial plants (*Zaujin Karim*) as a means of healing for humanity.

Keywords: *Phyllanthus niruri* L., antibacterial, *Escherichia coli*, inhibition zone.