

ABSTRACT

***IN VITRO* ANTIMICROBIAL ACTIVITY EVALUATION OF GINGER ABSOLUTE
ETHANOL EXTRACT AGAINST *Uropathogenic Escherichia coli* (UPEC)**

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Introduction: *Uropathogenic Escherichia coli* (75-90 %) is the most common organism found in the urine culture of women with UTI. The use of antibiotics to treat UTIs often lead to antimicrobial resistance. Therefore, it is necessary to develop research on herbals for the treatment UTI. Ginger (*Zingiber officinale*) is known to have antimicrobial activity against various microorganisms. Based on this background, the aim of this study was to determine the antimicrobial activity of ginger against UPEC and the MIC (Minimum Inhibitory Concentration) and MBC (Minimum Bactericidal Concentration) of UPEC.

Methods: This research was done by a true experimental method. MIC and MBC are determined using agar dilution method. The McFarland 0.5 suspension of UPEC is inoculated on agar with six different ginger concentrations, ie 2000 mg / ml, 1000 mg / ml, 500 mg / ml, 250 mg / ml, 125 mg / ml, and 62.5 mg / ml. The plates are incubated at 37°C overnight. The MIC and MBC is read as the lowest concentration without visible growth.

Results: No visible growth of bacteria on agar at a concentration of 2000 mg / ml and 1000 mg / ml. Thus, the value of MIC and MBC for UPEC is 1000 mg / ml. In this study, ginger extract at a concentration of 1000 mg / ml or higher acts as bacteriostatic and bactericidal for UPEC .

Conclusion: Ethanol extract of ginger (*Zingiber officinale*) has antimicrobial activity against *Uropathogenic Escherichia coli*. In this *in vitro* study using agar dilution method, the MIC and MBC for UPEC is at 1000 mg / ml.

Keywords: *Uropathogenic Escherichia coli* (UPEC) - Ginger (*Zingiber officinale*) - antimicrobial - agar dilution method

