

ABSTRACT

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Title : Antimicrobial Activity of Ethanol Extract and Essential Oil of *Mentha arvensis* L. and Thin Layer Chromatography Profile

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Pathogen infections have been the leading cause of death particularly in developing countries including Indonesia. Antimicrobial drugs used to treat these infections have side effects and are unaffordable in most of developing countries. It also enhances the resistance trait of the pathogen. Therefore, people started to use herbal medicines as an alternative treatment. The antimicrobial activity of ethanol extract and essential oil were examined using the disc diffusion method, minimum inhibitory concentration (MIC), and minimum bactericidal concentration (MBC). The identification of chemical compounds was performed using a thin layer chromatography (TLC). *Mentha arvensis* L. was discovered to possess antimicrobial activity against pathogenic bacteria. This study discovered that ethanol extract and essential oil showed antimicrobial activity against *E. coli* and *S. aureus*. Maximum antimicrobial activity was exhibited by essential oil on a concentration of 20%. The essential oil was revealed to begin inhibitory activity against *E. coli* and *S. aureus* on 0.08% of concentration which is lower than ethanol extract by maceration and soxhletation (0.39%). Essential oil also exhibited bactericidal activity against *E. coli* and *S. aureus* while ethanol extract showed no bactericidal activity against *S. aureus*. These antimicrobial activities were exhibited by chemical compounds contained in ethanol extract and essential oil.

Keywords: antimicrobial activity, ethanol extract, essential oil, *Escherichia coli*, *Staphylococcus aureus*