

The effect of antibacterial activity of *Artemisa capillaris* and *hovenia dulcis* classified by solvents and ratios

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Many perennial plants have been used in the treatment of abdominal pain, hepatitis, chronic gastroenteritis and coughing since ancient times in Korea.

Recently the biological and pharmacological actions of herb have been studied well such as antibacterial and antitumor activities. Especially *Artemisia capillaris* and *Hovenia dulcis* are known to have antibacterial effects.

In this experiment, *Artemisia capillaris* and *Hovenia dulcis* were used in order to investigate the antibacterial activity, when mixed. And we obtained the distilled water fraction, methanol fraction, ethanol fraction, chloroform fraction and ethyl acetate fraction. The mixed ratios were 9:1, 1:1 and 1:9 (*Artemisia capillaris* : *Hovenia dulcis*)

We used the paper disc diffusion method for measuring clear zone and the tryptic soy broth for gaining growth inhibitory curves.

In paper disc diffusion method, the results are as follows;

In gram positive *S. aureus*, ethanol fraction 1:1 at a concentration of 0.5mg, ethyl acetate fraction 1:1 at 1mg showed antibacterial activity appearing 26mm(diameter) clear zone. *L. monocytogenes*, ethanol fraction 9:1 at 0.5mg showed antibacterial activity as 40mm clear zone and ethyl acetate fraction 9:1 at 0.5mg showed antibacterial activity as 26mm clear zone.

In gram negative *S. enteritidis*, ethyl acetate fraction 1:1 at 0.5mg showed antibacterial activity as 30mm clear zone, chloroform fraction 1:1 at 0.5mg have an effect of antibacterial activity as 26mm clear zone. *E. coli*, distilled water fraction 1:9 at 0.5mg showed antibacterial activity as 20mm clear zone.

In growth inhibitory curves, the results are as follows;

In gram positive *S. aureus*, ethanol fraction 9:1, 1:1, 1:9 and chloroform fraction 9:1, 1:1 showed growth inhibitory activities for 72 hours. *L. monocytogenes*, ethanol fraction, ethyl acetate fraction 9:1, 1:1, 1:9 and chloroform fraction 9:1, 1:1 showed growth inhibitory activities for 72 hours.

In gram negative *S. enteritidis*, ethanol fraction 9:1, 1:1, 1:9 and chloroform 9:1 showed growth inhibitory activities for 72 hours, and in *E. coli*, ethanol fraction, ethyl acetate fraction 9:1, 1:1, 1:9 and chloroform 9:1, 1:1 showed growth inhibitory activities for 72 hours.

As results of this study, all fractions of 9:1 ratio have the highest antibacterial activity. And ethanol fraction, ethyl acetate fraction, chloroform and methanol fraction have higher antibacterial activity, respectively

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