



**DETECTION OF ANTI-VIRULENCE ACTIVITIES OF  
*Clausena anisum-olens* Merr. (KAYUMANIS) EXTRACT  
AGAINST *Escherichia coli* AND *Vibrio cholerae***

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### ABSTRACT

Anti-virulence is now one of the possible ways to combat the pathogenesis of bacteria. It inhibited the specific mechanism that promotes infection instead of totally killing the bacteria. This study was performed to determine the anti-virulence potential of ethanolic extract of *Clausena anisum-olens* against hemolysin production and biofilm formation of two gastro-intestinal pathogens, *Escherichia coli* and *Vibrio cholerae*. Extract of air dried *C. anisum-olens* was obtained by using 80% ethanol. The extracts remaining after rotary evaporation were sterilized and then incorporated in a specific culture media used in virulence assay specifically hemolysis and biofilm production. Prior antibacterial assay was done and it was detected that the plant extract did not inhibit the growth of the two bacteria. Virulence assays were detected that the extract exhibit anti-virulence against the hemolysin production of *E. coli* and *V. cholerae*. The extract also showed anti-virulence against biofilm formation of *E. coli* with a significant difference with a p-value of 0.023657 (p significant if  $<0.05$ ); on the other hand, the extract did not inhibit the formation of biofilm of *V. cholerae* therefore there is no significant difference having a p-value of 0.107422. The result showed the presence of anti-virulence activity in *C. anisum-olens* on selected virulence factor. Likewise, the results provided insights on how *C. anisum-olens* can affect other virulence factors in other ways. Molecular confirmation is recommended.

*Keywords: Anti-virulence, Ethanolic, Clausena anisum-olens, Escherichia coli, Vibrio cholerae, Biofilm, Hemolysin*



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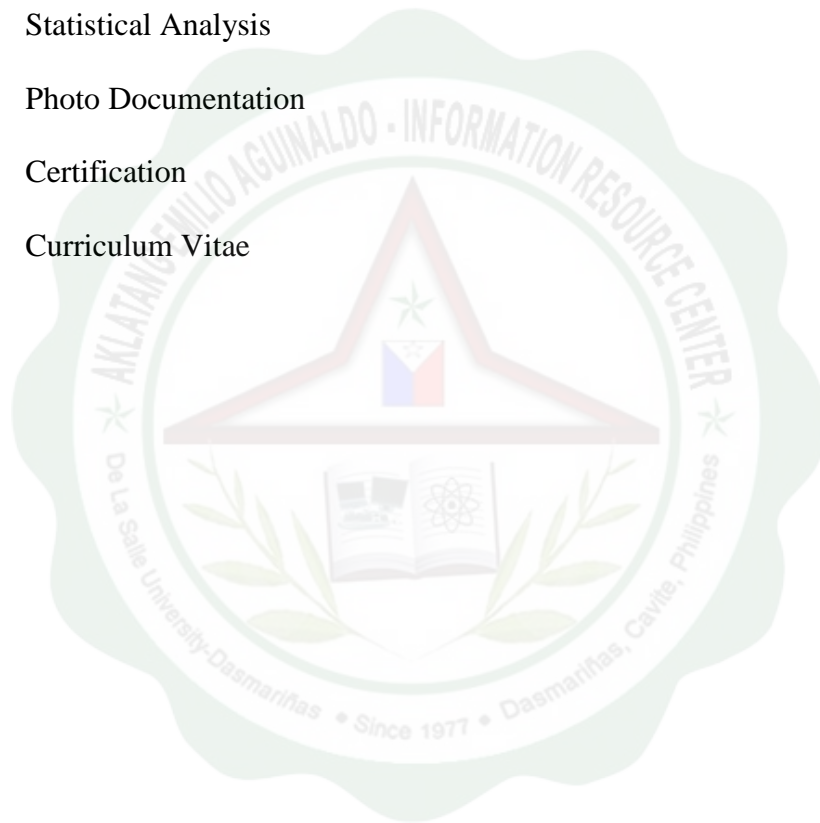
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