Antibacterial activity of garlic extracts on fish pathogenic bacteria

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Abstract

Aqueous and methanol extracts of *Allium sativum* (clove and peel) were investigated for its *in vitro* antibacterial properties against four marine pathogens, *Aeromonas hydrophila, Vibrio anguillarum, Vibrio alginolyticus,* and *Vibrio harveyi*. Antibacterial activity of different concentrations of aqueous and methanol garlic extracts were evaluated based on the inhibition zone using disc-diffusion method, minimal inhibitory concentration (MIC) and minimal bactericidal concentration (MBC) values. The aqueous extract of *A. sativum* (clove and peel) had no antibacterial effect against the pathogenic bacteria tested whereas the clove extract of methanol had inhibitory effects on the growth of all pathogenic bacteria tested. The maximum zone of inhibition was observed in *A. hydrophila* and the minimum was observed in *V. anguillarum* and *V. harveyi.* The MIC and MBC values revealed that *A. hydrophila* was able to be inhibited by supernatant extract of clove at lower concentration (0.6 mg/ml) while other pathogens are inhibited at slightly higher concentration. This study suggests that clove extract of *A. sativum* has the potential to be used as phytobiotics in controlling the growth of marine pathogens.

Keywords: Garlic extract, marine pathogens, antibacterial activity.

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