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Anti-Microbial Activity of Senna garrettiana Extract

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Abstract: Senna garrettiana is a climatic tropical plant in Southeast Asia. Senna garrettiana (Craib) is used as a medicinal plant in Thailand, in which the experiment reported that the plant contains triterpenoids, ligans, phenolics, and fungal metabolites. Thus, it is also reported that the plant possesses interesting biological activity such as antioxidant activity. Therefore, Senna garrettiana is selected to examine the antimicrobial activity. The purpose of this study is to examine the antimicrobial activity of Senna garrettiana (crab) extract against Gram-positive Staphylococcus aureus and Gram-negative Salmonella typhi, and the fungus Candida albicans. This study performed the agar disk-diffusion method and broth microdilution by using five concentrations of plant extract to determine the minimum inhibitory concentration (MIC) of S. garrettiana extract. The result showed that S. garrettiana extract gave the maximum zone inhibition of 11.7 mm, 13.7 mm, and 14.0 mm against S. aureus, S. typhi, and C. albicans, respectively. The MIC value of S. garrettiana against S. aureus was 125 µg/mL while the MIC in S. typhi and C. albicans greater than 2000 µg/mL. To conclude, S. garrettiana extract showed higher sensitivity of antibacterial activity against gram-positive bacteria than gram-negative bacteria. In addition, the plant extracts also possessed antifungal activity. Therefore, further investigation to confirm the mechanism of action of antimicrobial activity in S. garrettiana extract should be performed to identify the target of the antimicrobial action.

Keywords: antimicrobial activity, Candida albicans, Salmonella typhi, Senna garrettiana, Staphylococcus aureus

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