

The Antimicrobial Efficacies of Natural Flowers and Leaves Extracts Based Hand Sanitizer †

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Abstract: Hand sanitizer is the primary barrier to preventing transmission of enteric pathogens, and it is one way to avoid getting sick and spread the infection to others. Here, 70% ethanol extract of *Hibiscus rosa-sinensis* flower and leaves *Moringa oleifera*, Chrysanthemum flower, and aloe vera is used for antimicrobial hand sanitizer production. The extract of Hibiscus rosa-Sinensis has high antibacterial effects than the leaves. There is a high possibility to use extracts as antibacterial agents and also used for the treatment caused by *S. aureus* and *S. typhimurium* infection. The natural acids present in the Hibiscus plant helps for skin purification by breaking down dead skin and promoting healthy cell growth. Chrysanthemum flower has antibacterial properties and also acts as an antiseptic agent. It also has a gentle effect on the skin. Chrysanthemum flower has a significant inhibitory effect on *S.aureus* and *E.coli*. Moringa plant helps to promote cellular growth and destruction of skin tissue. It has anti-inflammatory and nourishing properties. Aloe Vera has a natural moisturizer that helps to moisture on dry and rough skin. This hand wash is to detect the efficiency of flowers, and the hand wash should be in organic form and antimicrobial form. The antibacterial activity against different microbes has been described in different *in-vitro* settings. For antimicrobial testing activity, antimicrobial susceptibility test, MIC MBC test was done to check for the presence of microbes. The goal is to detect possible drug resistance in common pathogens and assure susceptibility to drugs of choice for particular infections.

Keywords: hand wash; *Hibiscus rosa-sinensis*; Chrysanthemum flower; aloe vera; *Moringa oleifera*; antimicrobial susceptibility; drug resistance.

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Conflicts of Interest

The authors declare no conflict of interest.