Abstract title: Evaluating the Antimicrobial Efficacy of Ginger (Zingiber officinale) Against Common Bacterial and Viral Pathogens

Author: Salem Kidane

Ginger (Zingiber officinale) has been considered to possess significant antiviral and antibacterial properties. Traditionally, it is used in various cultures as a natural remedy for common illnesses, such as colds and other respiratory infections. To assess the full extent of ginger's antimicrobial potential, a comprehensive literature search was conducted through the University of Washington Library database. All research articles had to be published in peer-reviewed journals with an impact factor of at least 1.6. The findings from these studies indicated that ginger extracts exhibit strong antimicrobial activity. Notably, higher concentrations of ginger extracts were found to produce a greater inhibitory effect on microbial growth compared to lower concentrations. Ginger demonstrated potent antibacterial action against common pathogens, including *Escherichia coli* and *Staphylococcus aureus*, and significant antiviral effects against viruses, such as Chikungunya virus. These studies suggest that ginger could serve as a promising natural adjunct to conventional antimicrobial therapies, potentially enhancing the effectiveness of existing treatments. Despite the encouraging outcomes, future research should further investigate ginger’s efficacy by conducting in vivo (animal or human) studies. Such studies would be essential to evaluate cytotoxicity, pharmacological interactions, potential side effects, and the effectiveness of various extraction methods. Given the well-documented mechanisms of ginger’s antimicrobial actions, medicinal plants such as ginger may offer valuable sources for developing diverse antiviral agents. However, expanded research is recommended to confirm its clinical applications and optimize its therapeutic potential.