

The Inhibitory Effect of Tinian's Donni' Sali Extract

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ABSTRACT

Tinian's donni' sali is a chili pepper variant widely grown and consumed in the Northern Mariana Islands and Guam. Measuring approximately 2 centimeters in length, it belongs to the species *Capsicum frutescens* and is known for its intense pungency and culinary value. The pepper's biological activity is mainly due to capsaicin, the compound that gives it its heat. Research has shown that capsaicin has anti-inflammatory, antioxidant, and antimicrobial effects. These medical benefits are of growing interest, especially as antimicrobial resistance continues to grow and threatens the efficacy of conventional antibiotics. As researchers investigate naturally derived agents with antimicrobial potential, donni' sali presents itself as a promising candidate. Its capsaicin content may contribute to the inhibition of pathogenic bacterial strains, suggesting its value not only as a dietary element but also as a functional bioactive compound. This study investigated the antimicrobial potential of donni' sali against *Escherichia coli* and *Staphylococcus aureus*. Bacterial cultures were inoculated from Trypticase Soy Agar slant to thioglycolate broth and incubated for 24 hours. They were then exposed to varying extract concentrations (25%, 50%, 75%) and two volume ratios (1:0.5 and 1:1), followed by incubation, streaking onto blood agar plates, and re-incubation. We hypothesized that higher extract concentrations would inhibit bacterial growth. The findings of this study would determine the antimicrobial activity of donni' sali against harmful bacteria and bring further exploration of its medicinal potential against antimicrobial resistance.

KEY WORDS: Tinian, donni' sali, capsaicin, *Escherichia coli*, *Staphylococcus aureus*

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