ANTIBACTERIAL ACTIVITY OF BALLOON VINE (*Cardiospermum halicacabum* L.) LEAF AND FRUIT CRUDE EXTRACTS, AND THEIR COMBINATION AGAINST *Staphylococcus aureus*

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ABSTRACT

Staphylococcus aureus the leading cause of bacterial infections in hospitals and communities such as abscesses (boils), furuncles, and cellulitis is a major pathogen of increasing importance due to the rise in antibiotic resistance. *Cardiospermum halicacabum* a well-known plant was investigated to explore its capacity against bacterial activity such as *S. aureus* that would be useful in the production of compounds that can inhibit other pathogenic bacteria and other pathogenic microorganisms. This study attempted to extend such concept and explore the possibility of using *C. halicacabum* as possible agent in controlling human pathogens specifically the *S. aureus*. The mean (*M*) was used in order to determine the average zone of inhibition of *S. aureus* applied with balloon vine (*C. halicacabum*) leaf, fruit, and combined extracts, Amoxicillin (Positive control), and Ethanol (Negative control). Using the disc diffusion method, the crude extract of *C. halicacabum* showed that the greatest zone of inhibition of *S. aureus* was observed among those applied with Amoxicillin (*M=52mm*), followed by those applied with balloon vine fruit extract (*M=44mm*). Both leaf extract (*M=31mm*) and the combined leaf and fruit extract (*M=30mm*) also significantly exhibited inhibition against the *S. aureus*. There is no zone of inhibition observed among those applied with Ethanol (*M=.00mm*). The One-Way ANOVA test result shows that the *p*-value is .000 which is deemed to be statistically significant if $p<.001$.

Keywords: *Cardiospermum halicacabum leaf extract, Staphylococcus aureus, Extraction, Antibacterial Activity*