

SYNTHESIS AND ANTIBACTERIAL ACTIVITY AGAINST *Staphylococcus aureus* AND WOUND HEALING ACTIVITIES OF ALLICIN-SILVER NANOPARTICLE COMPOSITE

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ABSTRACT

NUEVO, LOUELLA M., Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, **JUNE 2019, SYNTHESIS AND ANTIBACTERIAL ACTIVITY AGAINST *Staphylococcus aureus* AND WOUND HEALING ACTIVITIES OF ALLICIN-SILVER NANOPARTICLE COMPOSITE**

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Allicin, extracted from fresh crushed garlic was synthesized with silver nitrate (AgNO_3) and a change in color into dark reddish brown forming allicin-silver nanocomposite and analyzed using UV-Vis Spectroscopy. The MIC of pure allicin and allicin silver nanocomposite were found to be 0.125g/ml using UV-Vis Spectroscopy.

The *in vitro* bacterial activity of allicin silver nanocomposite against *Staphylococcus aureus* were tested using disk diffusion assay. Zones of inhibition were measured and the findings were found to be not significantly different between treatments with Streptomycin as the highest zone of inhibition measuring 34.67mm.

The *in vivo* wound healing activity of allicin silver nanocomposite were evaluated using mice (*Mus musculus*) as the experimental animal. Allicin-silver nanocomposite shows better results with wound healing rate of 95.73% compare to the water with 81.67% wound healing rate.

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