ACTIVITIES EVALUATION OF SILVER NANOPARTICLE SYNTHESIZED USING ETHANOL EXTRACT OF PAPAYA LEAVES AS COSMETICS INGREDIENT

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ABSTRACT

Silver nanoparticles (AgNPs) synthesised using ethanol extracts of Carica *papaya L.* leaf to develop and exploit the ethanol extract of 70% and 96% of *Carica papaya L.* as bioreduction in the synthesis of AgNPs resulting the antioxidant and antibacterial activity. The antioxidant activity was determined using the DPPH method measured by UV-Vis spectrophotometer and the IC_{50} value was determined. While the antibacterial activity of AgNPs was determined by the inhibitory zone diameter of *Staphylococcus aureus*. The result of this research showed that AgNps biosynthesised from 70% and 96% ethanol extract of *Carica papaya L.* leaf able to inhibit the free radicals of DPPH with IC_{50} values of 1415.12 µg/mL and 1351.22 µg/mL respectively. While, both 70% and 96% ethanol extract also inhibit the *Staphylococcus aureus* bacterial growth within 5.40 mm and 6.27 mm, respectively. To sum up, although the AgNPs produced have low antioxidant activity, both extracts have the bacterial activity of *Staphylococcus aureus*.

Keywords: Biosynthesis of Silver Nanoparticles, Ethanol Extract of *Carica papaya L.*, Antioxidants, Antibacterials.

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