**COPARATIVE ANALYSIS OF DIFFERENT NANOPARTICLE SYNTHESIS OF EUPHORBIA MACULATA AND WALTHERIA INDICA LEAF EXTRACTS AND THEIR ANTIMICROBIAL ACTIVITY**

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**ABSTRACT**

Different zinc nanoparticles (Zn-NPs) of *Euphorbia maculata* and *Waltheria indica* were synthesized using zinc sulphate heptahydrate solution and a combination of zinc sulphate heptahydrate solution with 0.5M sodium hydroxide (NaOH) to increase pH to 12. The optical properties of the Zn-NPs were determined using UV/Vis spectrophotometer and Fourier Transmission Infra-red Spectrophotometer. Furthermore; the antimicrobial activity of the synthesized nanoparticles were compared with the diluted crude extracts of *E. maculata* and *W. indica* as well as zinc sulphate hepta-hydrate solution while commercially available antibiotics were used as control against five bacteria isolates namely *Staphylococcus aureus, Escherichia coli, Proteus mirabilis, Klebsellia pneumoniae and Pseudomonas aeruginosa* as well as two fungi isolates namely *Aspergillus flavus and Aspergillus niger*. The additive effects of the Zn-NPs were also determined using white emulsion paint; anticoagulant activities of the nanoparticles were compared with that of zinc sulphate solution and the respective crude extracts while Ethylene Diamine Tetraacetic Acid (EDTA) was used as control. Antioxidant activities of the nanoparticles, zinc sulphate solution and the respective crude extracts were compared with that of ascorbic acid. The surface morphology of the synthesized Zinc nanoparticles were also taken into consideration using Q250 Scanning Electron Microscope from FEI Eindhoven the Netherland.

KEYWORDS: Crude; Anticoagulant; EDTA; Spectrophotometer; Zinc nanoparticles (Zn-NP)