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Abstract

The comparative antibacterial effect of aqueous extract of Carica papaya leaves and Carica papaya nanoparticles against selected bacteria

B. J. Samuel
Achievers University, Owo, Ondo State, Nigeria

Abstract:

Silver salt and its colloidal formulations have been used since ancient times to treat ulcers, burns chronic wounds and other infections but its use was discontinued due to the interfering effects of salt and the development of new antibiotics, However, almost a decade back, renew interest grew for nanosilver owing to its high surface area to volume ratio and size-dependent unique optical, electrical, and thermal properties. Silver nanoparticles were synthesized using eco-friendly method with extract of Carica papaya as reducing and stabilizing agent. The silver nitrate solution was used as precursor. A visible colour change from yellow to dark brown confirmed the formation of the nanoparticles and the UV-Vis spectroscopy showed an absorbance of 0.69 at wavelength 435 nm for the silver nanoparticle. The antimicrobial activity of the synthesized nanoparticles was studied against Escherichia coli, Salmonella typhi and Staphylococcus aureus. The silver nanoparticles biosynthesized showed antimicrobial activity against the test isolates with zone of inhibition ranging from 10-15mm. Antimicrobial activity of silver nanoparticles was statistically significant as compared to Chloramphenicol at 0.05% level of confidence. Generally, the Minimum Inhibitory Concentration (MIC) and Minimum Bactericidal Concentration (MBC) values for Silver nanoparticle ranged from 0.22 – 0.42 g/ml and 1 – 30 cfu/ml respectively, against the test organisms. S. aureus was most sensitive while E. coli and S. typhi were least sensitive to silver nanoparticles, while the activities of C. papaya extract ranged from 0.32 – 0.42 g/ml and 6 – 36 cfu/ml respectively, against the test organisms E. coli and S. aureus were more sensitive while S. typhi was least sensitive to C. papaya nanoparticles.

Biography:

Rob Campbell the President of Med Cyber-Security, Adjunct Professor, Independent Distributed Ledger researcher, and Ph.D. student. Med Cyber-Security conducts independent research and consulting services that include; Quantum Resistant Cybersecurity Technologies (QRCT), Blockchain, and Distributed Ledger Technologies (DLT). Other services include Digital forensics, eDiscovery, Data Recovery and Security and Penetration testing. He is an international speaker, and an expert on security, encryption, networking, forensics, and Internet technologies. (International Peer-Reviewed Blockchain research which was originally published as a working

paper at the Blockchain International Scientific Conference hashtag#ISC2019 in London on 12 March 2019). The JBBA: https://lnkd.in/gNujUjR. The second peer-reviewed distributed ledger paper 'Transitioning to a Hyperledger Fabric Quantum-Resistant Classical Hybrid Public Key Infrastructure:' https://lnkd.in/gzyWupW was placed in Hyperledger Fabric's research library as a reference. Robert received his MS in Computer Science with a concentration in software engineering and space systems engineering from the Naval Post Graduate School. He is a senior cryptologist, cyber-security specialist, and healthcare certified information technologist. Additionally, Rob holds the following degrees and certifications: Bachelor's Degree in Electronic Engineering Technology, Space Systems Engineering Professional Code. He is a former Naval Cryptologist, with over 30 years of experience in the Department of Defense and the Intelligence Community. Passions: Quantum Physics, DLT, Cosmology, Ancient Technology, and Wisdom, Human Consciousness, and Truth.

Publication of speakers:

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