ABSTRACT BOOK ABSTRACTS



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WOUND HEALING

## BIOFABRICATION AND WOUND HEALING POTENTIAL OF BIOACTIVE CONSTITUENTS ENCAPSULATED ZINC OXIDE NANO-OINTMENT FROM CARISSA CARANDAS LINN.

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Context: Carissa carandas Linn. (Apocynaceae) commonly knowns as karmada, has been used traditionally in wound healing. The chemical compounds present in the leaves of the Carissa carandas are triterpenoids, phenols, glycosides, fatty acid and etc.

Objective: To investigate the in vitro wound healing and antimicrobial properties of Carissa carandas leaf extract and its biosynthesized zinc nanoparticles ointment.

Materials and Methods: The biofabricated Zinc oxide nanoparticles of Carissa carandas (CCZnO) were characterized by UV-Visible spectroscopy, Fourier transform infrared (FT-IR) studies, Field Emission Scanning Electron Microscopy (FESEM) and Energy Dispersive X-ray (EDX) studies. In vitro anti-inflammatory activity of CCZnO prepared ointment and leaf extract was evaluated by membrane stabilization and albumin denaturation, along with proteinase inhibitory assays. The antimicrobial activity of Carissa carandas extract and CCZnO prepared ointment was also studied against the bacterial and fungal strain using agar dilution method.

Results: Results suggested the production of nanoparticles are spherical in shape with strong peaks of zinc metal in EDX and showed a peak at 345 nm which is corresponding to the surface plasmon resonance band. Additionally, inflammatory markers supported the wound healing potential of synthesized CCZnO and plant extract. Plant extract and CCZnO also revealed significant antimicrobial activity against the bacterial and fungal strain.

Conclusions: Results advocated the wound healing and antimicrobial property of ointment base containing CCZnO are better than plant extract and provides a scientific reason for the use in the management of wound.

Keywords: Carissa carandas, Zinc oxide nanoparticles, wound healing property,





