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COMPARATIVE STUDY ON MEMBRANE SOLUBILISATION OF BIOSYNTHESED NANO-SILVER & BIOSYNTHESED NANO-ZINC OXIDE ON SELECTED SPERM PARAMETER

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ABSTRACT

Extensive applications of nanoparticles are used in the field of catalysis, biosensing, imaging, drug delivery, nano-device fabrication and medicine. Previously, biosynthesized nano-silver and biosynthesized nano-zinc oxide has shown significant effect as antimicrobial agents, thus reduces concern over the threat of antibiotic resistance. Biosynthesis of nano-silver and nano-zinc oxide using *Pandanus amaryllifolius* leaf extract and their spermicidal effect was explored in the present research following characterization using FESEM-EDX and were determined to be spherical in shape and aggregated into regular structure with high uniformity. The sperm membrane solubilisation property displayed by both biosynthesized nano-silver and biosynthesized nano-zinc oxide exceeded the effects of 1% (w/v) Triton-X and was most significant at the concentration of 100 µg/ml. The results suggested that biosynthesized nano-silver and biosynthesized nano-zinc oxide holds possibility as new generation spermicidal agents.

Keywords

Sperm membrane, cytotoxicity, nanoparticles, green synthesis, FESEM