

Compatibility of *Beauveria bassiana* strains on the biosynthesis of silver nanoparticles

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ABSTRACT:

Nowadays synthesis of nanomaterials by using bio-root is limelight of modern nanotechnology. In the present investigation, we have isolated four strains viz: KFRI 330 (A), KFRI 332 (B), KFRI 351 (C) and KFRI 352 (D) of *Beauveria bassiana* from the forest soils in Kerala. Spore count was tested for all the strains of *B. bassiana* stored in the laboratory. Silver nanoparticles were synthesized from the four strains of *B. bassiana* and the formation of nanoparticles was observed within 48 hours. The synthesized silver nanoparticle has been characterized by UV-Vis spectroscopy, FT-IR and TEM analysis. The appearance of UV-Vis Peak (SPR 440 nm) revealed the reduction of silver metal ions to silver nanoparticles by using the fungal strains. The possible bio-molecules involved in nanoparticles synthesis was identified by HPLC analysis. The functional groups involved in the silver nanoparticles synthesis were identified. The amide group is responsible for the synthesis of silver nanoparticles. From the TEM analysis, the size of the AGNPs has been measured as 4-70 nm (mean 10.7 ± 0.04 nm). It was evident from the HPLC result that primary amines act on capping as well as a stabilizing agent.

Keywords:

B. bassiana, Silver nanoparticles, Characterization, HPLC.