



Detection on silver nanoparticles production by *Streptomyces* spp. isolated from soil samples in Hilla city

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Abstract:(22) soil samples were collected from Hilla city. Ten isolates of *Actinomycetes* were recovered. Five isolates were identified as *Streptomyces* spp. Depending on morphological and biochemical assay. *Streptomyces* spp. Isolates were tested for silver nanoparticle production. The results showed that one *Streptomyces* spp. Isolate have ability for producing of silver nanoparticle. Silver nanoparticles (Ag NPs) production by *Streptomyces* spp. was detected by adding (1mM silver nitrate) to supernatant culture, yellowish- brown colour production after incubation indicate to formation of Silver nanoparticles. Cultural characteristics of *Streptomyces* spp.4 isolate was aerial mycelium with grey color, yellowish-brown substrate mycelium on yeast malt agar. Atomic force microscopy (AFM) results showed that AgNPs are spherical in shapes with the particle diameter (121.30nm). The surface thickness is 191 nm ,it represents thickness of the film surface roughness. Antimicrobial activity of particle was determined. The results showed that *Streptomyces*.4with high activity against *E.coli* with (14 mm) inhibition zone compared (11 mm) against *S.aureus*, (8 mm) against *C. albicans*.

Key words:*Streptomyces*spp., silver nanoparticle production, Antimicrobial activity.

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