

Green Synthesis and Treatment of Silver Nanoparticles from *Leishmania major* in Iraq

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Nanoparticles (NPs) play an important role in the diagnosis and treatment of diseases in consequence of their larger surface areas in comparison to the bulk material. Among the variety of nanomaterials, metal nanoparticles (MNPs) present unique physical, chemical and biological properties. The present study was evaluated the anti-*Leishmania* effect of silver nanoparticles on *Leishmania major* based on investigation of their action on various cellular parameters of the promastigote and amastigote forms of parasite.

Silver nanoparticles were synthesized using tannic acid (TA) as both reducing and stabilizer and monitored by UV-vis absorption spectroscopy and scanning electron microscopy (SEM) images. TA coating resulted in a red-shift and broadening of bands. *In vitro* assays of *Leishmania major* promastigotes showed an increase of anti-*Leishmania* activity for AgNPs-TA. This screening can contribute to the development of new, green and fast produced drugs aiming at *Leishmaniasis* treatment. Moreover these biologically synthesized nanoparticles were found to be highly effective against different multi-drug resistant human pathogens.