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Biosynthesis of silver nanoparticles using *Aspergillus oryzae* and its extracellular protein profile

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The biological generation of silver nanoparticles (AgNP) is a straight forward process. However, the mechanism by which this process takes place is unclear. We demonstrate the synthesis of AgNPs using fungal filtrate of *Aspergillus oryzae*. A characteristic peak of AgNP formation was detected at 435 nm. Eight most prominent extracellular protein bands were identified using MALDI/TOF Mass spectrometry. Here, we suggest that proteinaceous molecules such as some amino acids, play an essential role in converting $AgNO_3$ into AgNP. Moreover, this is the first report suggesting that AgNP are stabilized by the chelating agent, 5-hydroxy-2-hydroxymethyl-1,4-pyrone (kojic acid). Our findings suggest that this species would be useful for large scale AgNP production.

 Keywords: *Aspergillus oryzae*, MALDI-TOF, Silver nanoparticles

Biography

Marwa R. Obiedallah is currently an assistant lecturer of Microbiology at Faculty of Science, University of Sohag, Egypt. She has MSc in mycotoxins (2011), and gained wide experience in fungal natural products and mycotoxins during her study. She was offered a scholarship from the Egyptian cultural affairs and missions sector for her PhD project at the at School of Biological Sciences, University of Reading, UK, where she had the opportunity to improve her skills and experience. She is a postgraduate member at the British Mycological Society (2017-2019). Her research interests now is focusing on nanotechnology, where she is paying attention for the mechanism by which fungal species can generate nanoparticles of their metal salts. She believes that he findings will direct future researches for proteome studies of promising fungal isolates.

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