

Size - dependent antibacterial activities of silver nanoparticles

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Silver has long been known as an antimicrobial agent. A toxic effect of silver on a wide range of micro-organisms is very well known; however, the bactericidal mechanism is only partially understood. Nanoparticles are small enough to penetrate cell membranes and defenses, yet they are large enough to cause trouble by interfering with normal cell processes. In this work, we tried to study silver nanoparticles toxicity. We used two kinds of methods to make homogeneous nanoparticle suspensions and filtered different size of filters. Each solution was characterized to determine their mean size, shape and concentrations. The antibacterial effects were investigated by cell viability. The number of survival cells (CFU/ml) revealed after nanoparticle was exposed cells which in log phase growth to determine antibacterial concentrations of silver nanoparticles. It was clear that the bactericidal effect of the silver nanoparticles is size dependent.