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Review

> [J Nanobiotechnology](#). 2011 Aug 3;9:30. doi: 10.1186/1477-3155-9-30.

Silver nanoparticles are broad-spectrum bactericidal and virucidal compounds

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Abstract

The advance in nanotechnology has enabled us to utilize particles in the size of the nanoscale. This has created new therapeutic horizons, and in the case of silver, the currently available data only reveals the surface of the potential benefits and the wide range of applications. Interactions between viral biomolecules and silver nanoparticles suggest that the use of nanosystems may contribute importantly for the enhancement of current prevention of infection and antiviral therapies. Recently, it has been suggested that silver nanoparticles (AgNPs) bind with external membrane of lipid enveloped virus to prevent the infection. Nevertheless, the interaction of AgNPs with viruses is a largely unexplored field. AgNPs has been studied particularly on HIV where it was demonstrated the mechanism of antiviral action of the nanoparticles as well as the

inhibition the transmission of HIV-1 infection in human cervix organ culture. This review discusses recent advances in the understanding of the biocidal mechanisms of action of silver Nanoparticles.

Figures

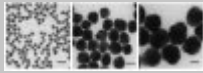


Figure 1 Transmission electron microscopy (TEM) images...

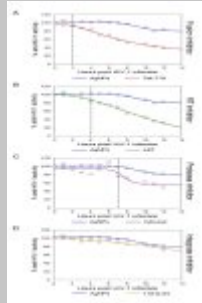


Figure 2 Time-of-addition experiment .
HeLa-CD4-LTR-β-gal

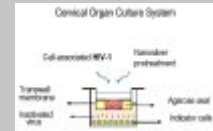


Figure 3 Human cervical culture model

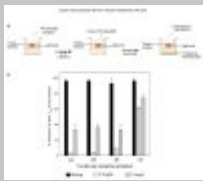


Figure 4 Protection from HIV-1 infection following...

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