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Biochem Biophys Res Commun. 2009 Dec 18;390(3):733-7. doi: 10.1016/j.bbrc.2009.10.039.
Epub 2009 Oct 21.

Cytotoxic effect and apoptosis induction by silver nanoparticles in HeLa cells.

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Abstract

Nanosilver has well-known antibacterial properties, and is widely used in daily life as various medical and general products. In comparison with silver ion, there is serious lacking of information concerning the biological effects of nanoAg. In this study, we observed the cytotoxic effect of nanoAg in HeLa cells. The nanoAg-induced cytotoxicity was lower than that of AgNO(3), used as a silver ion source. Apoptosis evaluated by flowcytometric analysis was associated with this cell death. Further, the expressions of ho-1 and mt-2A, well-known oxidative stress-related genes, were up-regulated by nanoAg treatment. Our results showed that nanoAg possesses the potential for cytotoxicity, therefore, in the case of exposure at high concentrations, we should consider to protect from nanoAg-induced toxicity.

PMID: 19836347 [PubMed - indexed for MEDLINE]

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