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In-vitro inhibition of BVDV as surrogate model for HCV using novel gold nanoparticles

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In this study, we evaluated *in-vitro* cytotoxic effect and antiviral properties of gold nanoparticles, which are previously reported to possess *in-vitro* antiviral properties against HIV and multi strains of influenza virus. To investigate the antiviral activity of gold nanoparticles against cytopathic strain (NADL) bovine viral diarrhea virus (BVDV): citrated gold nanoparticles of 7 ± 2 nm were prepared and PEG functionalized. Evaluation of the cytotoxicity of prepared gold nanoparticles did not show toxic effects to MDBK cells with concentration of 2 and 4 ppm. Afterward the antiviral activity of nanoparticles was evaluated by the inhibition of the cytopathic effect on infected MDBK cells by means of (MTT) based colorimetric assay and was found that 4 PPM is the optimum concentration for virus inhibition. The results of the *in-vitro* antiviral activity and cytotoxicity showed that prepared gold nanoparticles has limited *in-vitro* toxic effect at concentration of 4 PPM also has strong affinity to BVD virus and reasonable inhibitory effect on BVDV.

Biography

Mostafa El-gaffary has completed his MVSc 2010 from Cairo University and his PHD from Cairo University Faculty of Veterinary Medicine. He is lecturer and director of Clinical pathology Lab in his Faculty; he was Trainer for postgraduate student on Biomedical application of Nanotechnology, Molecular biology and Immunology at Biotechnology center for research located in his Faculty 2007 – 2014.

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