Abstract

A generation of nanoparticles research has discussed recently. It is mandatory to elaborate the applications of biogenic nanoparticles in general and anticancereous property in particular. The present study was aimed to investigate the in vitro cytotoxicity effect of biogenic silver nanoparticles (AgNPs) against human breast cancer (MCF-7) cells towards the development of anticancer agent. Biogenic AgNPs were achieved by employing Sesbania grandiflora leaf extract as a novel reducing agent. It was well characterized by FESEM, EDAX and spectral studies showed spherical shaped nanoparticles in the size of 22 nm in slightly agglomerated form. It was surprising that biogenic AgNPs showed cytotoxic effect against MCF-7 cell lines were confirmed by MTT, AO-EB, Hocheck and COMET assays. There was an immediate induction of cellular damage in terms of loss of cell membrane integrity, oxidative stress and apoptosis were found in the cell which treated with AgNPs. This may be a first report on anti-MCF-7 property of biogenic AgNPs in the fourth generation of nanoparticles research. It is necessary to study the formulation and clinical trials to establish the nano drug to treat cancer cells.

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