

Ameliorating Effects of Silver Nanoparticles Synthesized Using Chlorophytum borivillianum against Gamma Radiation Induced Oxidative Stress in Testis of Swiss Albino Mice

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Abstract : *Chlorophytum borivillianum* root extract (CBE) was chosen as a reducing agent to fabricate silver nanoparticles with the aim of studying its radioprotective efficacy. The formation of synthesized nanoparticles was characterized by UV-visible analysis (UV-vis), Fourier transform infra-red (FT-IR), Transmission electron microscopy (TEM), Scanning electron microscope (SEM). TEM analysis showed particles size in the range of 20-30 nm. For this study, Swiss albino mice were selected from inbred colony and were divided into 4 groups: group I- control (irradiated-6 Gy), group II- normal (vehicle treated), group III- plant extract alone and group IV- CB-AgNPs (dose of 50 mg/kg body wt./day) administered orally for 7 consecutive days before irradiation to serve as experimental. CB-AgNPs pretreatment rendered significant increase in body weight and testes weight at various post irradiation intervals in comparison to irradiated group. Supplementation of CB-AgNPs reversed the adverse effects of gamma radiation on biochemical parameters as it notably ameliorated the elevation in lipid peroxidation and decline in glutathione concentration in testes. These observations indicate the radio-protective potential of CB-AgNPs in testicular constituents against gamma irradiation in mice.

Keywords : Chlorophytum borivillianum, gamma radiation, radioprotective, silver nanoparticles

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