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TOXICITY OF SILVER NANOPARTICLES LOADED WITH *Pleurotus tuber-regium* EXTRACT ON RATS

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Abstract

The aim of the work was to provide synthesis and characterization of silver nanoparticles loaded with *P. tuber-regium* extract and to assess their acute toxicity and haemotoxicity activity on rats. Acute toxicity of silver nanoparticles was studied by up-and-down-procedure and haemotoxicity was analyzed by differential red blood cell (RBC) count. UV-visible spectroscopy analysis provided peak at 463.9 nm. Scanning electron microscopy analysis showed nanoparticles of 60.8 nm to 94.9 nm in size and spherical in shape. X-ray diffraction analysis showed 125.7 nm average sizes of the silver nanoparticles. Dynamic light scattering analysis provided the average diameter 71.4 nm and zeta potential of -11.2 mV of the synthesized nanoparticles. Fourier transform infrared spectroscopy analysis showed major transmission peaks at 3295.6 cm^{-1} corresponds to O-H stretch for alcohol and phenol 1602.2 cm^{-1} corresponds to N-H and C=C stretch for primary amine and conjugated alkene. Acute toxicity test showed no mortality, gross behavioural changes and decreased body weight. Significant increase in total RBC ($4.30 \pm 0.05 \times 10^6$

μL), phenotypic coefficient of variation packed cell volume (PCV $26.46 \pm 0.01\%$) and total white blood cell (WBC $8.12 \pm 0.27 \times 10^3$

μL) was observed in 400 mg/kg extract dose treatment group compared to control group. Thus, synthesized silver nanoparticles loaded with mediated by *P. tuber-regium*

aqueous extract had no acute toxic, haemotoxic effect but they showed dose dependent haematinic and immune modulation activity.

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