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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  $3295.6$   $\text{cm}^{-1}$  corresponds to O-H stretch for alcohol and phenol  $1602.2$   $\text{cm}^{-1}$  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 ( $4.30 \pm 0.05 \times 10^6$

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

$\mu\text{L}$ ) 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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