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Nephroprotective potential of gold nanoparticles synthesized by *Vitis vinifera* against CCl₄ induced toxicity

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The synthesis of metal nanoparticles is a growing area for research due to its potentiality in the application and development of advanced technologies. In general, nanoparticles are synthesized by using chemical methods which are not eco-friendly. Here, we have used a fast, convenient and environment-friendly method for the synthesis of gold nanoparticles (AuNPs) by reducing HAuCl₄ with fruit extract of *Vitis vinifera* for the nephron-protection in Wistar Albino. Formed nanoparticles characterized by UV-Vis analysis, zeta sizer and zeta potential, scanning electron microscope (SEM), transmission electron microscopy, Fourier-Transform Infrared Spectroscopy (FTIR) and X-ray diffraction analyses. Healthy Wistar rats (180±10 g) were administrated with single dose of CCl₄ (1.5 ml/kg, I.P.). Administration of green synthesized AuNPs at different doses (50, 100 and 150 µg/ml) restored a number of biochemical parameters manner, including Serum Transaminases (AST and ALT), hepatic Lipid Peroxidation (LPO), reduced Glutathione (GSH), Superoxide Dismutase (SOD), Catalyse (CAT), serum albumin, serum Lactate Dehydrogenase (LDH), bilirubin, Serum Alkaline Phosphatase (SALP), urea and uric acid in dose dependent, which was also supported by histopathological study. Thus the present work revealed that AuNPs synthesized by *Vitis vinifera* showed potential nephroprotective activity.

Biography

Chandra Kant Sharma is currently working as an Assistant Professor in Department of Bioscience and Biotechnology, Banasthali Vidyapith, India and is the author of several research papers in reputed journals and magazines.

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