

## Assessment of Acute Oral Toxicity Studies and Anti Diabetic Activity of Herbal Mediated Nanomedicine

**Authors :** Shanker Kalakotla, Krishna Mohan Gottumukkala

**Abstract :** Diabetes is a metabolic disorder characterized by hyperglycemia, carbohydrates, altered lipids and proteins metabolism. In recent research nanotechnology is a blazing field for the researchers; latterly there has been prodigious excitement in the nanomedicine and nano pharmacological area for the study of silver nanoparticles synthesis using natural products. Biological methods have been used to synthesize silver nanoparticles in presence of medicinally active antidiabetic plants, and this intention made us assess the biologically synthesized silver nanoparticles from the seed extract of *Psoralea corylifolia* using 1 mM silver nitrate solution. The synthesized herbal mediated silver nanoparticles (HMSNP's) then subjected to various characterization techniques such as XRD, SEM, EDX, TEM, DLS, UV and FT-IR respectively. In current study, the silver nanoparticles tested for in-vitro anti-diabetic activity and possible toxic effects in healthy female albino mice by following OECD guidelines-425. Herbal mediated silver nanoparticles were successfully obtained from bioreduction of silver nitrate using *Psoralea corylifolia* plant extract. Silver nanoparticles have been appropriately characterized and confirmed using different types of equipment viz., UV-vis spectroscopy, XRD, FTIR, DLS, SEM and EDX analysis. From the behavioral observations of the study, the female albino mice did not show sedation, respiratory arrest, and convulsions. Test compounds did not cause any mortality at the dose level tested (i.e., 2000 mg/kg body weight) doses till the end of 14 days of observation and were considered safe. It may be concluded that LD50 of the HMSNPs was 2000mg/kg body weight. Since LD50 of the HMSNPs was 2000mg/kg body weight, so the preferred dose range for HMSNPs falls between the levels of 200 and 400 mg/kg. Further In-vivo pharmacological models and biochemical investigations will clearly elucidate the mechanism of action and will be helpful in projecting the currently synthesized silver nanoparticles as a therapeutic target in treating chronic ailments.

**Keywords :** herbal mediated silver nanoparticles, HMSNPs, toxicity of silver nanoparticles, PTP1B in-vitro anti-diabetic assay female albino mice, 425 OECD guidelines

**Conference Title :** ICPBMAPS 2016 : International Conference on Plant Biology, Medicinal and Aromatic Plant Sciences

**Conference Location :** Singapore, Singapore

**Conference Dates :** September 08-09, 2016