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Assessment of acute oral toxicity studies of herbal mediated nanomedicine

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Introduction: Diabetes is characterized by hyperglycemia, 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 nonpharmacological area for the study of silver nanoparticles. In recent research biological methods have been used to synthesize silver nanomedicine (HMSNM) in presence of medicinally active plants extensively used in treatment of diseases and this intention made us to assess the HMSNM using 1 mM silver nitrate solution. In current study the HMSNM tested for possible toxic effects in healthy female albino mice by following OECD guidelines-425.

Results and Discussion:
Figure1 XRD graph of silvernanoparticles **Figure 2** EDX graph of silver nanoparticles **3** Photograph of section of heart (control) **4** Photograph of section of HMSNPs treated Figure 1 represents presence of peaks at 2θ values 28.1°, 33.09°, 47.36°, 56.29° corresponds to (111), (200), (202), (311), planes of silver, respectively. Thus, the XRD spectrum confirms the crystalline nature of HMSNPs. No peaks of other impurity crystalline phases were detected. The energy dispersive spectrum (Fig. 2) revealed the clear identification of the elemental composition of the synthesized HMSNM. The result obtained from histopathological sectioning was in agreement as there was no apparent damage to the heart, liver and pancreas observed in the treated groups when compared with the control group, this study therefore confirmed that the HMSNPs were non-toxic to the heart, liver and pancreas within the treatment durations.

Conclusion: HMSNM were successfully obtained from bio reduction of silver nitrate using *Psoralea corylifolia* plant. 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 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. Further pharmacological models and biochemical investigations will clearly elucidate the mechanism of action and will be helpful in projecting the currently synthesized HMSNM as a therapeutic target in treating chronic ailments.

References:

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