In-vivo therapeutic potential of biologically synthesized silver nanoparticles

Kalakotla Shanker and Gottumukkala Krishna Mohan
JNT University Hyderabad, India

In recent times, nanomaterials are being used in antidiabetic studies for their exclusive properties such as small size, more surface area, biocompatibility and enhanced solubility. In view of this, present study aimed to evaluate the antihyperglycemic potential of Biologically Synthesized Silver Nanoparticles (BSSNPs) and Gymnema Sylvestre (GS) extract. The crystalline nature of the BSSNPs was confirmed by x-ray diffraction; the characteristic peaks observed at 2θ = 38.23°, 44.33°, 64.56° and 77.45° were corresponded to (111), (200), (220) and (311). The SEM and HRTEM analysis divulges that the BSSNPs were spherical in shape. EDAX spectrum exhibits peaks for the presence of silver, carbon and oxygen atoms in the range of 1.0-3.1 keV. The results showed increased blood glucose, cholesterol, triglycerides, LDL, VLDL, huge loss in body weight, downturn in plasma insulin. The GS extract (200 mg/kg, 400 mg/kg), BSSNPs (200 mg/kg, 400 mg/kg) and Metformin 50 mg/kg were administered to the diabetic rats. BSSNPs at dose level of 400 mg/kg showed significant inhibition of blood glucose levels and lipid profile as compared with GS extract treated group. These detections revealed that BSSNPs possess potent antihyperglycemic and anti-hyperlipidemic activity and thus preferable over crude extract.

Biography
Kalakotla Shanker has completed MPharm from JNT University Hyderabad and he is currently pursuing 3rd year of full time PhD in JNT University Hyderabad, India. He has published more than 15 research papers in international peer reviewed reputed journals.

shankerkalakotla@gmail.com

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