عنوان مقاله:

Synthesis of silver nanoparticles by Galega officinalis and its hypoglycemic effects in type ۱ diabetic rats

محل انتشار:

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خلاصه مقاله:

Objective(s): Diabetes is related with the higher blood levels of liver enzymes and inflammatory factors. Galega officinalis is used as a medicinal plant for treatment of diabetes traditionally. In this work, silver nanoparticles (Ag-NPs) were synthesized with green method using Galega officinalis extract.Materials and Methods: The synthesized green Ag-NPs were characterized completely. Intact or diabetic rats receieved intraperitoneal injection of saline or ۲/۵mg/Kg green synthesized Ag-NPs. Mean serum levels of glucose, hepatic enzymes and hematological parameter were determined. Gene expression of tumor necrotic factor alpha (TNF-α) was done by real-time PCR. Results: Synthesis of green synthesized Ag-NPs was confirmed by FT-IR, XRD and UV-vis analyses. The FESEM and TEM images showed spherical Ag-NPs with size of ۲۵ nm. The hypoglycemic influence of Ag-NPs using Galega officinalis extract is reported for the first time in this study. Blood concentration of liver enzymes, urea, glucose, white blood cells count and TNF-α mRNA levels in visceral adipose tissue significantly declined in diabetic rats receiving Ag-NPs.Conclusion: The synthesized Ag-NPs using Galega officinalis extract may improve complication of diabetes via preventing liver hepatocyte damage and reducing inflammatory factors.

کلمات کلیدی:

Diabetes, Galega officinalis, Liver enzymes, Silver nanoparticle, TNF-α

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