Anti-diabetic Efficacy of Silver Nanoparticles Biosynthe-sized from Marine Red Seaweed *Halymenia porphyroides* Boergesen on Alloxan Stimulated Hyperglycemic Activity in Rats

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ABSTRACT
The assessment of silver nanoparticles biosynthesized and characterized using UV-Spec, FTIR, XRD, TGA, SEM, TEM from marine red seaweed *Halymenia porphyroides* have been evaluated for its anti-hyperglycemic activity *in vivo*. The anti-diabetic efficacy of the biosynthesized silver nanoparticles from marine red seaweed *Halymenia porphyroides* was studied by chemically inducing diabetes in the experimental Wistar albino rats through Alloxan monohydrate, which ultimately results in hyperglycemia at a dosage of 50 mg/kg body weight given orally for about 28 days. The outcome of the results was estimated by various biochemical parameters from the treatment group with silver nanoparticle (50 mg/Kg i.p) biosynthesized from *Halymenia porphyroides*. The anti-diabetic efficacy of the treatment group showed a decrease in the levels of blood glucose levels, total cholesterol, triglycerides, low-density lipoprotein, and phospholipids whereas the body weight and HDL increase was observed. The histopathological evaluation of the pancreas of the treated group of animals revealed the restoration and regeneration of β-cells of the pancreas with moderate swelling as compared to that of the chemically induced alloxan diabetic group of animals.

KEYWORDS: Anti-diabetic efficacy; Silver nanoparticles; Alloxan Monohydrate; *Halymenia porphyroides*; Glucose tolerance.