Effects of silver nanoparticles biosynthesized of seaweed, *Sargassum angustifolium* on hematological indices of common carp (*Cyprinus carpio*)

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Abstract

One of the nanoparticles that has developed is silver nano particles (AgNPs) and now it is the most widely used nanomaterial in the nanotechnology industry. In this study the silver nanoparticles were synthesized biologically using *Sargassum angustifolium* algae and its effects on blood factors of common carp in the face of three concentrations of nanoparticles (AgNPs) include 0.11, 1.13 and 5.67 mg/L of AgNPs, respectively on the basis of 1 % , 10 % and 50 % of median lethal concentration along with a control treatment were evaluated for 14 days. Total white blood cell (WBC) count in the face of various concentrations of silver nanoparticles and red blood cell(RBC) count in the treatment of 1%LC50 AgNPs on days 1, 3 and 7 and Hematocrite treated with AgNPs 1% on day3 exhibited significantly increased when compared with other groups ($p<0.05$). The treatment of 50% AgNPs on fish showed maximum hemoglobin contents than other groups ($p<0.05$). Also, MCV values on day 1 and MCHC values on day 14 at various silver nanoparticles treatments statistically significantly increased compared to control group ($p<0.05$). Results showed that the nanoparticles synthesized from algae can have an adverse effect on hematological indices of common carp, especially in high concentrations.

Keywords: Silver nanoparticles, *Sargassum angustifolium*, Hematological indices, Common carp (*Cyprinus carpio*).