Determination of Lethal Concentration (LC_{50}) of Silver Nanoparticles Produced By Biological and Chemical Methods in Asian Sea Bass Fish

Bita S. [1]*; Balouch A.[1]; Mohammadian T. [2]

1- Department of Fisheries, Faculty of Marine Sciences, Chabahar Maritime University, Iran
2- Department of Aquatic Animal Haealth, Faculty of Veterinary, Shahid Chamran University of Ahwaz, Iran
*Corresponding autor's Email: serajbita@yahoo.com

Abstract

Nanotechnology is a technology that originates from the reactions and reactions that occur at the atomic level and is a new revolution for all future sciences. The aim of this study was to investigate the lethal concentration of silver nanoparticles produced by biological method from Sargassum algae and commercial silver nanoparticles produced by chemical method in Asian sea bass fish. The fish were exposed to different concentrations of the two types of nanoparticles in a 30-liter aquarium for 96 h and their mortality was recorded every 24 h. After mortality was recorded, lethal concentration was calculated using probit test in SPSS software. According to the results, the mean lethal concentrations of silver nanoparticles were calculated for biological and chemical nanosilver respectively 19.669 and 1.569 mg/L, respectively. The results showed that with increasing concentration of silver nanoparticles as well as exposure time the percentage of mortality in fish increased. The highest mortality was observed at the highest concentration of silver nanoparticles.

Keywords: Toxicity, Biosynthesis, Silver Nanoparticles, Asian Sea Bass