

عنوان مقاله:

The effect of ZnO nanoparticles on the Vibrio species isolated from coastal water of the Persian Gulf port

محل انتشار:

فصلنامه پزشکی هرمزگان، دوره 17، شماره 4 (سال: 1392)

تعداد صفحات اصل مقاله: 7

نویسندگان:

M. Malakootian

A. Toolabi

A. Javadi

M. Ahmadian

M.R. Zandmonfared

خلاصه مقاله:

Introduction: Using zinc oxide nanoparticles, as a catalyst removal of fecal pollution indicator bacteria in water, has been studied as a model of bacterial contamination. This study aims to determine the toxicity and selection of appropriate indicators to evaluate the toxicity of zinc oxide nanoparticles on the isolated bacteria Vibrio species of Bushehr coastal waters. Methods: In this experimental study, 100 samples of sea water off the coast of Persian Gulf in Bushehr coastal areas were selected. 10 centigrade of each sample was cultured on the TCBS medium. In the next step, differential tests were conducted on colonies of positive oxidase. The specific concentrations of nanoparticle were prepared and paper discs were impregnated with the concentrations and then bacterial isolates from the 0.5 McFarland suspensions was prepared. After incubation, inhibition zone was reported in millimeters at each concentration. Data analysis was performed using by SPSS 16 Software. Results: The strains of bacteria detected by culturing samples of raw water including Vibrio cholerae, Vibrio parahaemolyticus, Vibrio vulnificus and Vibrio mimicus. Minimum and maximum number of Vibrio strains were, Vibrio cholerae and Vibrio parahaemolyticus, respectively. Elimination of Vibrio Cholerae, Vibrio Parahaemolyticus, Vibrio Vulnificus and Vibrio Mimicus strais in concentration of 6000 mg/L zinc oxide nanoparticles were 95%, 90%, 75% and 70%, respectively. Conclusion: Due to significant effect of nanoparticle in removal of genus Vibrios, economic justification and other factors should be considered in application of nanoparticles, in eliminating bacterial pathogens in water industry.

کلمات کلیدی:

Zinc Oxide, Vibrio, Bushehr, Persian Gulf, Zinc Oxide, Vibrio, Bushehr, Persian Gulf

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1913157>

