

عنوان مقاله:

A study on antibacterial effect of nanosilver colloidal solution against Escherichia coli isolates from human and poultry in North-West of Iran

محل انتشار:

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نویسنده:

Raheleh Majdani - Department of Biology, Faculty of Science, University of Maragheh, Maragheh, Iran

خلاصه مقاله:

Background and Aim: Because of emerging resistant bacterial strains to antimicrobial agents, using effective alternatives such as silver nanoparticles has become unavoidable. Materials and Methods: For the first time, ۳۰۰ E.coli were isolated from humans, healthy poultry and poultry that their sensitivity were evaluated to the four different concentration of solution of colloidal silver nanoparticles (۴۰, ۸۰, ۴۰۰ and ۴۰۰۰ ppm) with the size of ۵ and ۲۰ nm using standard disk diffusion method in the North-West of Iran. Then statistical analysis of the results was performed Results: The largest zone of inhibition (ZOI) was related to suspected isolates of colibacillosis in most concentrations of both solution of silver nanoparticles. By comparing the results of different used concentrations in three groups, except the solution of ۲۰ nm which was suspected to Colibacillosis and isolated from poultry, there was no significant difference between concentrations of ۴۰ and ۸۰ ppm. By using ۵ nm colloidal solution, the statistically significant difference was observed in all concentration among the mean zone of inhibition in three isolated groups. Whereas, the significant difference was not shown in of ۴۰ and ۸۰ concentrations (ppm) among three groups isolates. Conclusions: For effective use of antibacterial properties of single nanoparticles colloidal solutions, having enough knowledge about regional strains, their susceptibility and properties of the silver nanoparticles are inevitable. Application of colloidal solutions of silver nanoparticles as an effective antibacterial agents against E. coli isolates needs enough information .about regional isolates and rate of their susceptibility and also properties of the nano-silver solutions

کلمات کلیدی:

,Silver nanoparticles, Antibacterial effect, Escherichia coli, Human, Poultry
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