

عنوان مقاله:

Synthesis of MgO Nanoparticles and Their Antibacterial Properties on Three Food Poisoning Causing Bacteria

محل انتشار:

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خلاصه مقاله:

Background: Application of nanoparticles in the removal of pathogenic bacteria is very important. The use of these materials can be appropriate for controlling pathogens and food-borne diseases. The purpose of this study was to synthesize magnesium oxide nanoparticles and investigate its antibacterial effect on several bacteria causing food poisoning. Materials and Methods: Oxide magnesium nanoparticles are synthesized by chemical deposition method. In order to control the quality and morphology of samples, XRD and SEM methods were used. The effect of different concentrations of nanoparticles on *Staphylococcus aureus*, *Salmonella enterica* and *Bacillus cereus* was evaluated by Agar well diffusion technique and the antibiotic resistance patterns of the bacteria used were also examined. Results: MgO nanoparticles had an extensive antibiotic resistance but were effective on all bacteria and the minimum inhibitory concentration of growth on *Staphylococcus aureus*, *Salmonella enterica* and *Bacillus cereus* was 0.75, 1.25, and 5 mg/mL and the minimum bactericidal concentration of them were determined to be 0.15, 2.5 and 10 mg/mL, respectively. Conclusion: MgO nanoparticles exhibited remarkable antibacterial activity against food poisoning causing bacteria and can be used as an antibacterial agent more effectively.

کلمات کلیدی:

Magnesium oxide Nanoparticles, Food poisoning, Antibacterial properties. Preservative نانوذرات اکسید منیزیم، باکتری های عامل مسمومیت غذایی، خواص ضدباکتریایی.

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