

البحث الثامن

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مشارك مع آخرين من خارج التخصص – مقبول للنشر	8

Title	Antimicrobial Effect of Chitosan and Nano-chitosan Against Some Pathogens and Spoilage Microorganisms.
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ABSTRACT

An experiment was conducted to investigate the antimicrobial effect of chitosan and nano-chitosan. Two G-, three G+ bacteria and three fungal strains were used as test microorganisms. The obtained results indicated that 88% of nano-chitosan particle size was in the range of 93.76nm and 12% in 405nm. Nano-chitosan showed maximum antibacterial activity against *Staph. aureus* and *L. monocytogenes* with inhibition zone of 30mm (23µg/ml concentration) and the lowest 23mm with *E. coli* at the same concentration. Other tested bacteria were affected in different degrees. The MIC and MLC ranged between 64 to 256 and 128 to 512µg/ml, respectively. The highest effect was against *Staph. aureus* at 23µg/ml. Chitosan solution was found to have less antifungal activity against *C. albicans* when compared to nano-chitosan. MIC and MLC for chitosan were recorded at 64 and 128µg/ml and 23 and 46 µg/ml with nano-chitosan. The highest nano-chitosan activity was recorded against *Sacch. cerevisiae*, 7 and 16µg/ml for MIC and MLC, respectively. Nano-chitosan at concentrations 3.0 and 4µg/ml were the most effective to retard fungal activity.