

## عنوان مقاله:

Study the effect of extracted bacteriocin of *Lactobacillus fermentum* with probiotic potential on biofilm formation of isolated *Streptococcus mutans* from dental caries

## محل انتشار:

بیستمین کنگره بین المللی میکروب شناسی ایران (سال: 1398)

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## خلاصه مقاله:

**Introduction and Objectives:** Dental caries is one the most common disease in each person especially in children and having a lot of economic burden for people. *Streptococcus mutans* is the major organism in dental caries. and despite all the efforts used in the production of oral hygiene products , tooth decay is still in force. So we study the inhibitory effect of extracted bacteriocin of probiotic *Lactobacillus fermentum* on biofilm formation of isolated *Streptococcus mutans* from dental caries. **Material and Method:** *Lactobacillus fermentum* isolated from some traditional food and their probiotic potential was done by heat ,acid and bile tolerance tests and molecular confirmation test done by sequencing of PCR product of 16SrDNA gene . Bacteriocin of isolated *Lactobacillus fermentum* extracted by partial purification with ammonium sulfate . Molecular weight of bacteriocin was assayed by sds-page. *Streptococcus mutans* from dental caries was isolated by biochemical methods and molecular confirmation done by PCR for specific gene *gtfD*. Studying the biofilm formation of *Streptococcus mutans* and inhibitory effect of bacteriocin , assayed by TTC(Triphenyl Tetrazolium Chloride) in 96wells-diffiusion plate. **Results:** 3(13%) strains of 23 isolated *Lactobacillus fermentum* from traditional food had probiotic potential . Partial purification with ammonium sulfate showed , 2 isolated of probiotic *Lactobacillus fermentum* had potential for producing bacteriocin. Extracted bacteriocin had 63 and 35 Da molecular weight respectively. Out of 100 samples of decayed dental, 39(39%) *Streptococcus mutans* was isolated . All of them could able to form biofilm. Results shown that extracted bacteriocin can decrease the biofilm formation each seperately and had similar effect with each other. Cumulative of two bacteriocin had no significant effect compared to individual mode. **Conclusion:** Due to reducing role of bacteriocin on biofilm formation, using of them as natural product in dental hygiene sanitation can be effective and useful and it can play a significant role in reducing the cost of treatment for dental caries

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