

## BACTERIOCIN INDUCED MILK- A VEHICLE IN PRESERVING ORAL HEALTH

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**T**ooth decay, also called as dental caries has been ranked at 3<sup>rd</sup> position by World Health Organization among all chronic non-communicable diseases. It has been pointed out by W.H.O., that despite of great improvements in the oral health of population in several countries; dental caries still persists and has become a global problem. Numerous studies have shown that the association of *Streptococcus mutans* and *Streptococcus sobrinus* cause higher levels of caries. Bacteriocins are potent protein toxins produced by virtually every bacterial and archeal species. In this study, bacteriocins have been isolated from the species of *Lactobacillus brevis* isolated from curd by centrifugation at 12,000 rpm for 5 min using (RM 12C Microcentrifuge, REMI Motors, Mumbai, India). The isolated bacteriocins were screened for their antibacterial activity against the isolated species of *Streptococcus mutans* and *Streptococcus sobrinus* using spot on lawn assay. Thus, the isolated bacteriocins could inhibit the growth of these isolates of dental caries. The bacteriocins were then optimized using different pH, temperature and time combinations for their maximum production. Their purification was done using ammonium sulphate precipitation and centrifugal filtration. The bacteriocins with different concentrations (0.05 ml, 0.1 ml, 0.5 ml and 1 ml) were then induced in 1ml of skim milk (Experimental Dairy section, NDRI, Karnal). These were subjected for antibacterial activity against isolates of dental caries using agar well diffusion assay. They were incubated at 37°C for 24 h to observe for the presence or absence of zone. Therefore, the bacteriocin induced milk showed inhibition against caries causing organisms. Thus, bacteriocin induced skim milk can act as a potent in strengthening of oral health.

## BIOGRAPHY

Parul Thapar is a research scholar in Dairy Science and Technology (sp. *Dairy Microbiology*) from Indira Gandhi National Open University, New Delhi, India. Parul has publications in national and international journals and Science magazines. Her publications reflect her research interests in Food, Health and Microbiology. She has been awarded by BRICPL Young Scholar Award and Young Achievers Award.

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