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Identification and characterization of bacteriocins isolated from soil bacteria and comparison between two characterized bacteriocins

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Bacteriocins are an abundant and diverse group of ribosomally synthesized antimicrobial peptides produced by bacteria inhibit the growth of similar or closely related bacterial strain. It can be used as alternative to antibiotics. The aim of our research work was to identify and characterized the bacteriocins produced by soil-associated bacteria. Subtilin from *Bacillus subtilis* and pyocin from *Pseudomonas aeruginosa* (*Pa*) were found active against gram-positive microorganism tested. Production of both the bacteriocins started and observed during the stationary phase. Maximum production of both the bacteriocins was observed at 30 degrees C in BHI medium. Subtilin remained stable during 4-8 pH while pyocin *Pa* remained stable at pH 1-11. Activity of both was completely lost after proteinase K treatment suggesting their protein nature. Both of the bacteriocins were found resistant to high temperature (121o C for 30 min), detergents (1% solutions of EDTA, Tween-20 and SDS) and solvents (1% solutions of Ethanol, Methanol, Chloroform and Acetone) Titer of Subtilin was estimated to be 4680 AU/mL while the titer for pyocin *Pa* was calculated as 780 AU/mL. Both of the bacteriocins showed bacteriolytic mode of action against the indicator *Bacillus* strain BC31 and were found <25 kDa in their molecular mass.

Biography

K L R Bonhi is currently pursuing her PhD (Applied Microbiology) from Manav Rachna International University. She has published four papers in different national and international conferences.

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