The present investigation deals with the isolation, screening and identification of bacteriocinogenic lactic acid bacteria cultures. Production, partial purification and characterization of bacteriocin.

We have taken 162 lactic acid bacteria isolates obtained from 137 different dairy products, 95 strains exhibited bacteriocin activity. Nineteen strains were identified as \textit{Lactococcus lactis} subsp. \textit{lactis}. The strain \textit{Lactococcus lactis} subsp. \textit{lactis} CCSUB202 selected for further studies. \textit{Lactococcus lactis} subsp. \textit{lactis} CCSUB202 cultured in soya nutri nuggets extract (SNREM-a new medium) broth (pH 7.5) for production of bacteriocin in 16 h incubation at 37°C. The bacteriocin was secreted as a primary metabolite during the log phase reaching the higher titre (5280 AU/ml) at the end of the log phase. It was further precipitated by ammonium sulphate (0-60% saturation) with 12.0 fold purification and 77.5% recovery. We have purified the bacteriocin further by gel filtration in HPLC.

This bacteriocin provides a broad-spectrum antibacterial activity inhibiting \textit{Listeria monocytogenes} MTCC1143, \textit{Listeria monocytogenes} MTCC657, \textit{Bacillus subtilis} MTCC441, \textit{Salmonella typhi} MTCC734, \textit{Staphylococcus aureus} MTCC96, \textit{Clostridium perfringens} MTCC450, \textit{Micrococcus} MTCC106. The molecular weight of bacteriocin determined approximately 3.5 kDa by SDS-PAGE technique. The bacteriocin was extremely heat stable (100°C/ 30 minutes) active over a wide pH range (1-12). The activity of bacteriocin increased by 3-fold upon treatment with 1% SDS but was unstable in salt solution (NaCl 0.5 M or more).

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