2.5 SUMMARY AND CONCLUSIONS

The study was undertaken to know the antimicrobial nature of bacteriocins from \textit{L. garvieae}, which was isolated from cow’s milk. The inhibitory activity of bacteriocins had been evaluated against various gram +ve and gram –ve microbes. The influence of various supplements such as salts and detergents, enzymes and physical conditions such as pH, temperature, incubation period on the antimicrobial activity of bacteriocins had been evaluated, which had shown an enhancement in the activity of bacteriocins.

- The results have shown that the use of supplements such as salts and detergents lead in the increase of antimicrobial activity. Thus, the use of supplements in the formulation of bacteriocins preparations had enhanced the antimicrobial activity.

- The effect of enzymes on the antimicrobial activity of bacteriocins from \textit{L. garvieae} had been studied. Thus, the enzymes viz., Amylase, Asparginase had an optimum effect whereas, proteinase-k, lysozyme have reduced antimicrobial activity of bacteriocins. This had revealed that enzymes can be used as supplements in preparation of antibiotics. Which have lesser side effects and more reliable entities in the drug formulations.

- The effect of incubation period on the antimicrobial activity of bacteriocins from \textit{L. garvieae} had been studies. Thus, the results have disclosed that 30 and 40 h of incubation have increased the production of bacteriocin in larger amount which lead to the increased antimicrobial activity.

- The effect of incubation temperature on the antimicrobial activity of bacteriocins from \textit{L. garvieae} had been studies. Hence, the results have unveiled
that 40 and 50 °C of incubation temperature have increased the bacteriocin activity. Whereas, temperature of 60 and 80 °C have diminished the antimicrobial activity, suggesting that bacteriocin is temperature sensitive and can be regulated by controlling temperature.

- The effect of incubation temperature and pH on the antimicrobial activity of bacteriocins from *L. garvieae* had been evaluated. However, the results have unveiled that pH of 6 and 7 were ideal for bacteriocin activity but pH of 4, 9 and 10 have decreased the bacteriocin activity, thereby suggesting that bacteriocin activity is pH dependent as it is proteinaceous in nature.

The present study revealed that the supplements such as EDTA, tween 80, tween 20, SDS, Urea, Nacl and enzymes such as amylase, asprginase, proteinase K, Lysozyme and at various pH, temperature and incubation period, there is variation in the bacteriocin activity of *L. garvieae* isolated from cows milk. The study successfully came to a conclusion that there is higher bacteriocin activity at optimum pH, temperature and incubation period and in supplementation with various components suggesting its synergistic effects.