5.5 SUMMARY AND CONCLUSIONS

Bacteriocins have also been suggested as a potent antineoplastic agent. Bacteriocins show similarity to that of commonly used antineoplastic drugs such as quinolones. Interestingly, microcin B17 (bearing oxazole and thiazole groups) shares structural homology similar to bleomycin, a peptide used in the treatment of cancers. Hence, the present study was aimed at evaluating the anticancer activity of bacteriocin against various cancer cell lines such as MDA-MB - Human adenocarcinoma, mammary gland, LNCap-FGC - Human carcinoma Prostate cell line, K-562- Human chronic myelogenous leukemia, Bone marrow, Hela - Human cervix, A549 - human lung carcinoma cell lines.

- The cytotoxicity was carried out on five cell lines. The cytotoxicity of bacteriocin against MDA-MB - Human adenocarcinoma, mammary gland at a concentration of 10, 20 and 30 μg/ml showed the (inhibitory concentration) IC₅₀ value of bacteriocin against MDA-MB - Human adenocarcinoma was found to be 30 μg/ml.

- The bacteriocin was further tested on cell lines such as K-562- Human chronic myelogenous leukemia, Bone marrow, Hela - Human cervix, A549 - human lung carcinoma at a concentration of 10, 20 μg/ml and 30 μg/ml of bacteriocin, but shown no cell lysis or cytotoxicity of bacteriocin was observed.

- Further, the cytotoxicity of against LNCap-FGC - Human carcinoma Prostate cell line was sensitive at different degrees to the toxic bacteriocin at a concentration of 10, 20 and 30 μg/ml showed the IC 50 value of bacteriocin against LNCap-FGC - Human carcinoma Prostate was found to be 20 μg/ml.
The present findings revealed the anticancer activity of bacteriocin on diverse class of cancer cell lines. The bacteriocins have the potential to inhibit cancer cell from its growth and viability. The cancer cell cycle can be controlled by induction of bacteriocin-mediated apoptosis. They will be toxic against various cancer cell lines and can be utilized as future anticancer drug.