CHAPTER VII

CONCLUSIONS

The results of the present study demonstrated that ESBL - producing uropathogenic enterobacteria played an important role in urinary tract infection, especially MDRE such as *E. coli*, *K. pneumoniae* and *E. cloacae*. These results expected that *E. coli* was the most common uropathogens of Maharaj Nakorn Chiang Mai hospital in 2007.

Two isolates of antimicrobial producing *Lactobacillus* possessed the potent activity against the uropathogenic enterobacteria. They were *L. plantarum*1 and *L. pentosus*. For the characterization of their antimicrobial compounds in the cell - free supernatant, it may be concluded that their high bacteriocin production could exhibit the major antimicrobial activity to the tested isolates.

For the inhibitory effects of *Lactobacillus* culture and its agents on the growth of the uropathogenic bacteria, they could inhibit the growth of the tested uropathogens. The results of growth, bacteriocin production and mixed culture with the uropathogens strongly suggested that *L. plantarum*1 strain L541 and *L. pentosus* strain LSS can be used to protect the infections of the urogenital tract. However, these bacteriocins showed the slightly reduction of the β - lactamase activity after mixed with these extracted periplasmic proteins.

Further study, these proteins which shown antimicrobial activity should be purified and characterized in the proteomic level. The study about the inhibitory

effects of the antimicrobial activity of lactobacilli toward the β - lactamase activity should be developed to prevent the ESBL - producer in the future.