

CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

In conclusion, *Lactobacillus rhamnosus* ATCC 7469 CFS exhibited antimicrobial and anti-biofilm activity against *Porphyromonas gingivalis*. Multiple vital genes were affected by the treatment with *L. rhamnosus* ATCC 7469 CFS. This study provided fundamental knowledge about the potential of *L. rhamnosus* ATCC 7469 CFS antimicrobial and anti-biofilm potential and its underlying mechanism of actions. This knowledge is crucial in understanding the implication of probiotics' action against dental pathogens. Limitation of the study includes the small group of pathogen and probiotic involved in the study and all parts of the study were conducted in vitro with controlled conditions. Additionally, the concentration of *L. rhamnosus* ATCC 7469 CFS was not determined in this study, where only volume/volume concentration of the crude CFS was used. Improvement can be made by determining the concentration of the crude CFS prior to the test. This study can be expanded by assessing the potential of probiotics CFS on other periodontal pathogens. Other than that, it is interesting to investigate the probiotics action on improving periodontal health in the in vivo model and clinical settings.