CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The new kind of wound care products is a wound spray dressing. To develop the new wound spray dressing, we consider the ability to be the antibacterial activity and also the wound healing promoter. Therefore, mangosteen extract was observed ability of antibacterial property and enhance polyvinyl acetate covering on wound. PVAc film, was formed a transparent film faster after spraying solution on skins or wounds. The amount of mangosteen extract was considered by MIC and MBC values. The lowest mangosteen extract value that can inhibit visible growth of bacteria both gram-positive and gram-negative is 50 µg/ml and the minimum value of mangosteen extract that can kill both gram-positive and gram-negative bacteria completely is 100 µg/ml. In addition, several methods were used to investigate bacterial activity which are Disk diffusion method ATCC147 and Time-kill assay. Bacterial viability reduced after an increase of mangosteen extract value. In vitro drug release, both in PBS (7.4) and in acetate buffer (5.5), MG1, MG2, and MG3 released quickly in initial time and then kept constant after 6 hours. For the in vitro (indirect cytotoxicity evaluation) MG1, MG2, and MG3 did not toxic when they were evaluated by human fibroblast and mouse fibroblast cells (L929), which showed higher than 80% of cell viability and all specimens show higher effectiveness than commercial products. Furthermore, the waterproof property was investigated for wound spray dressing product by using image analysis. The contact angle results show that all specimens have waterproof property but this property will go down when increase amount of mangosteen extract. All in all, the results show that polyvinyl acetate solution loaded with mangosteen extract might be used for wound care product with biocompatibility and antibacterial activity. In the future, spray's solution of polyvinyl acetate loading with mangosteen extract have been improved the better film formation and evaporation rate.