

CHAPTER V

CONCLUSIONS

In the present contribution, Coconut oil was successfully incorporated into silk fibroin through emulsion forming with Pluronic f68 as surfactant and fabricated the oil-incorporated silk fibroin sheet by vacuum drying technique for possible use in wound care application. The oil-incorporated silk fibroin sheet exhibited good absorption ability that was important to wound dressing properties. So as to control wound exudates and keep moist environment on the wound. Moreover, releasing behavior, absorption ability and evaporative water loss depended on the number of coating layer of methanol-treated silk fibroin film on the oil-incorporated silk fibroin sheet. At high number of coating layer, the rate of releasing was high and the amount of released oil become constant at long time. However, the absorption ability and the evaporative water loss were low. To compromise between these properties, double-coating layer of methanol-treated silk fibroin film on the oil-incorporated silk fibroin sheet was made to give good properties to the sheet for use as wound dressing.

The released oil from the oil-incorporated silk fibroin sheet exhibited antimicrobial activity against both *S. aureus* (Gram-positive bacteria) and *E. coli* (Gram-negative bacteria), which are general bacteria found on the contaminated wound. These properties of the oil-incorporated silk fibroin sheet indicated that the oil-incorporated silk fibroin sheet was a possible material for use as wound dressing.