

## **CHAPTER V**

### **CONCLUSION**

The bionanocomposite sponges composing of different weight ratios of cellulose whisker, chitin whisker, and sericin were fabricated by freeze-drying technique. The bionanocomposite sponges with sericin had porous structure with open pores on the surface whereas those without sericin had interior porous structure with thin sheets of whiskers on the outermost surface. After crosslinking, the bionanocomposite sponges could appreciably retain their shapes when immersed in water. The effect of each composition in the bionanocomposite sponges on the releasing of sericin was investigated at physiological pH with and without lysozyme. It was found that a sufficient amount of sericin was released from the sponges to protect a wound from infection, to prevent damage from oxidation to cells and eventually to promote wound healing. On the other hand, the remaining portion of sericin in the sponges can provide moisturizing effect to the wound.