ABSTRACT

Diabetes has been categorized as the fifth highest mortality cause worldwide. The diabetic wound has an altered wound-healing mechanism which leads to longer inflammation stages and higher chances of infection. Hence, it causes chronic wounds. Because it is necessary to keep the wound moist and manage exudate, the wound dressing selection is essential in the management of the wound. Bacterial cellulose/Biocellulose (BC) could provide moisture and improve exudate absorption as the wound dressing. It could also stimulate tissue regeneration in skin restoration. The addition of keratin in wound dressing would induce keratinocyte migration and maintain the integrity of the epithelium. Green tamanu oil also has been reported to have anti-inflammatory and antibacterial properties that support wound healing activity. Thus combining keratin and green tamanu oil in wound dressing will fasten the wound healing process. In this study, STZ did not successfully induce prolonged diabetic conditions in rabbits. Wound healing on normal rabbits was treated with green tamanu oil and keratin-immersed bio-cellulose (KBC) produced from *Komagataeibacter intermedius*. The combination of KBC and green tamanu oil resulted in a faster wound-healing process. It showed antibacterial activity against gram-positive bacteria. This study suggests that KBC and green tamanu oil could potentially affect diabetic wound healing. However, further studies were required to optimize the diabetic-inducing method.

Keywords : Rabbit, Wound Healing, Keratin, Biocellulose, *Calophyllum inophyllum*