BEE POLLEN SEBAGAI KANDIDAT BIOPRODUK UNTUK MEMPERCEPAT PROSES PEMBENTUKAN OSTEOBLAS PADA LUKA PENCABUTAN GIGI TIKUS WISTAR

(BEE POLLEN AS BIOPRODUCT CANDIDATE TO ACCELERATE THE PROCESS OF OSTEOLASTS FORMATION OF WOUND HEALING IN WISTAR RATS)

ABSTRACT

Background. Delayed wound healing of tooth extraction can cause many problems such as risk of microorganism infection as well as complaints and discomfort feeling in patients. The use of natural materials to accelerate the process of wound healing and bone formation is preferred because it is easy to use, inexpensive, and has a bactericidal or bacteriostatic effect. Bee pollen contains flavonoids, vitamin C, vitamin D, vitamin K, Ca, Mg, and zinc that have been reported to stimulate bone formation and has anabolic effects in bone metabolism by its work as a regulator in stimulating osteoblasts. Thus, it is needed to do research on the effects of bee pollen on bone growth in the post-extraction sockets using osteoblast cells as the indicator. Purpose. The aim of this study was to analyze the ability of bee pollen’s biological properties in accelerating the process of forming osteoblasts in tooth extraction wound of a rat.

Method. The left mandibular incisor was extracted and the post extraction socket was filled with bee pollen ointment (concentration 10%, 20%, 40%, and 80%) and then the soft tissue was sutured. After 28 days, rats were killed and the mandible is removed to be used for the histopathologic preparations. Osteoblast cell was calculated based on the number of osteoblast cells were found in three fields of view using microscope with 400x magnification. Results. There were significant difference between control and a concentration of 20%, 40%, and 80%. Conclusion. A concentration of 40% bee pollen can effectively speed up the process of osteoblast cells by increasing the number of osteoblast cells which can further accelerate the process of wound healing in wistar rats.

Keywords: Bee pollen, wound healing, osteoblast