

INDUKSI KOMBINASI SPIRULINA DAN KITOSAN PADA SOKET
PENCABUTAN GIGI TERHADAP OSTEOBLAS TULANG ALVEOLAR
(*Cavia cobaya*)

*THE INDUCTION OF THE COMBINATION OF SPIRULINA AND CHITOSAN
INTO TOOTH EXTRACTION SOCKET TOWARDS OSTEOBLAST CELLS IN THE
ALVEOLAR BONE (Cavia cobaya)*

ABSTRACT

Background: In prosthodontics, the making of dentures requires prominent and dense alveolar bone structure, used as a denture buffer. During tooth extraction, the volume of alveolar bone will be decreased, and then morphological changes will occur. Osteoblasts are bone -forming cells found in the edge of the periodontal ligament coating the bone socket. To increase the number of osteoblast cells, the induction of the combination of spirulina and chitosan gels as natural ingredient must be conducted to accelerate the process of bone remodeling. **Objective:** To determine the effect of chitosan (200 mg) and spirulina 3%, 6 %, and 12 % induced into tooth extraction sockets towards osteoblast cells in the alveolar bone. **Method:** First, tooth extraction was conducted on 28 *Cavia cobayas*, and those were then divided into 4 treatment groups, namely control group (CMC Na 3gr), group I (200 mg of chitosan & spirulina 3 %), group II (200 mg of chitosan & spirulina 6 %), and group III (200 mg of chitosan & spirulina 12 %). After 30 days, those were killed, and histological preparation was made by HE staining. Finally, the number of osteoblast cells was calculated with binocular light microscope with a magnification 1000x. **Results:** There was significant difference between control group, group I and group II, and no significant difference between group II and group III. **Conclusion:** The induction of the combination in group III can be indicated as the most efficient method in increasing the number of osteoblasts.

Keyword : alveolar bone, spirulina and chitosan, osteoblast