

ABSTRACT

THE APPLICATION OF SEA CUCUMBER (*Stichopus hermanni*) EXTRACT TO IMPROVE EXPRESSION FIBROBLAST GROWTH FACTOR-2 (FGF-2), FIBROBLAST CELLS, AND CAPILLARY BLOOD VESSELS IN WOUND HEALING (*Cavia Cobaya*)

PEMBERIAN EKSTRAK TERIPANG (*Stichopus hermanni*) TERHADAP PENINGKATAN EKSPRESI FIBROBLAST GROWTH FACTOR-2 (FGF-2), JUMLAH FIBROBLAS, DAN PEMBULUH DARAH KAPILER PADA PENYEMBUHAN LUKA *Cavia Cobaya*

Background: Tooth extraction is a surgical procedure performed by a dentist. Wound after tooth extraction in some patients with systemic diseases such as diabetes mellitus may be delayed its healing. Asian people especially depends on traditional medicine. One of them is sea cucumber or in bahasa indonesia called teripang. Sea cucumber (*Stichopus hermanni*) consists of chondroitin sulfate, lectin, zinc, and some other trace elements and natural phytochemical which are believed to take part in wound healing process. Acceleration of wound healing can be observed from the increased of fibroblast growth factor-2 (FGF-2) expression, the number of fibroblast cells and capillary blood vessels. **Purpose:** To investigate application of sea cucumber (*Stichopus hermanni*) extract towards increased wound healing process after tooth extraction. **Methods:** Sea cucumber extract was made using ethanol solvent. Have their left incisive tooth extracted, research animals are then divided into 4 groups based on concentrations: 0%, 100%, 80%, and 60%. All samples are executed on the 3th day of application to perform histopathological and imunohistochemistry evaluation as well as to count expression (FGF-2), fibroblast cell, and capillary vessels among groups. **Result :** One way anova test showed significant difference between groups. The research has proven the relation between the increased of FGF-2, fibroblast cell, capillary blood vessels and sea cucumber extract application. Tukey HSD showed significant difference (FGF-2 and fibroblast cells) between control group and dose 80% of sea cucumber extract application. **Conclusion:** Application of sea cucumber extract can accelerate wound healing by increasing the amount of FGF-2 expression, fibroblast cells, and capillary vessels.

Keywords: sea cucumber (*Stichopus hermanni*), wound healing, fibroblast growth factor-2 (FGF-2), fibroblast cells, capillary vessels