

ABSTRACT

THE POTENTION OF *Mangifera casturi* (Kosterm.) BARK FRACTION TO IL-1 β AND BMP-2 EXPRESSIONS DURING THE BONE REMODELING AFTER TOOTH EXTRACTION

Background: The main problem of Indonesian oral health is the high number of tooth decay. Tooth extraction is an action which is often experienced by patient who have tooth decay and the wound caused alveolar bone resorption. Bark of *Mangifera casturi* has been researched containing secondary metabolite which has ability to increase osteoblast's activity and suppress osteoclast's activity.

Objective: The purpose of this study analyzed the IL-1 β and BMP-2 activity during the bone remodeling after *Mangifera casturi*'s bark fraction treatment.

Methods: This study used 40 male Wistar rats which are divided in 4 group. The *Mangifera casturi* bark extraction was done by 96% ethanol maceration and n-hexane fractionation. The extraction was done on mandible incisive tooth. The research material in each treatment group a *Mangifera casturi* (Kosterm.) gel extract dose of 6,35%, 12,7%, and 25,4%. Wistar's mandible were decapitated at interval 7 and 14 days after extraction. The antibody staining on preparations for the examination of IL-1 β and BMP-2 expressions was done by immunohistochemistry.

Result: There was a significant difference in IL-1 β and BMP-2 expressions in 6,35%, 12,7%, and 25,4% treatment group on control group with $p < 0,05$.

Conclusion: *Mangifera casturi*'s bark fraction dose 12,7% able to induces the decrease the IL-1 β expression and increase the BMP-2 expression effectively during the bone remodeling after tooth extraction.

Keyword: BMP-2, bone remodeling, IL-1 β , *Mangifera casturi* (Kosterm.) and tooth extraction.