

## ABSTRACT

### THE EFFECT OF CAFFEINE USAGE DURATION TOWARD THE NUMBER OF OSTEOBLASTS IN WOUND HEALING POST TOOTH EXTRACTION ON WISTAR RATS

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**OBJECTIVE.** The objective of this study was to proved effect of caffeine toward the number of osteoblasts in wound healing after tooth extraction on Wistar rats.

**MATERIAL AND METHOD.** The study was an experimental laboratory using random design to examine 3 months old male Wistar rats as sample group. There were 24 rats whose weight about 200-300g, which were divided into 4 groups (each group consisted of 6 rats). The control group was rats which were fed by standard diet. Treatment group was divided into 3 groups (P1, P2, P3). These groups were rats which underwent caffeine diet using dosage of 3.78 mg/100g/cc. P1 was treated caffeine diet for 7 days, P2 was caffeine diet for 14 days and P3 was caffeine diet for 21 days. After that, all the groups underwent the extraction of the right first molar of lower jaw and were let 7 days. Then they were decapitation for jaw bone preparation for histological examination and were analyzed the number of osteoblasts through light microscope then the observed osteoblasts were counted. He result of the data was analyzed with One-way Anova and then with LSD test.

**RESULT.** The result of this study indicated that there was a significant decrease the number of osteoblasts caused by caffeine consuming in the group observed after 7, 14 and 21 days ( $p < 0.005$ ).

**CONCLUSION.** The conclusion of the study showed that the duration of caffeine consuming affected to the number of osteoblasts found in the extraction site during the healing process.

**Keywords:** caffeine, osteoblasts, healing