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**EFFECTIVENESS OF LUMBRICUS RUBELLUS
EARTHWORM EXTRACT AGAINST THE
NUMBER OF OSTEOCLASTS IN WISTAR
PERIODONTITIS RAT**

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*Background/Objective(s): Chronic periodontitis is an inflammatory tooth supporting network involving the periodontal ligament and alveolar bone by the main pathogenic bacteria *Porphyromonas gingivalis*. The RANKL-RANK bond stimulates the maturation of preosteoclasts into osteoclasts, resulting in alveolar bone resorption. *Lumbricus rubellus* earthworm extract has activities as anti-bacterial and anti-inflammatory, which can inhibit NFkB and reduce pro-inflammatory cytokine. The aim of this study was to decide the effect of *Lumbricus rubellus* (EEW) earthworm extract on decreasing the number of osteoclasts.*

*Materials and Methods: Experimental study with a post test only group design. Each of the five Wistar rats in each treatment was made periodontitis by induction of *P gingivalis* and silk ligature bacteria. Treatment of rats: control / not given EEW (P0), oral EEW administration 200mg / kg / bb (P1), topical EEW administration of 20% (P2). Decantation on day 3,7,14,21 for evaluation of osteoclasts. The study was conducted at the Analytical Laboratory and the Faculty of Veterinary Medicine, Udayana University.*

Result: Day 3 the number of osteoclasts did not differ significantly in each group ($p > 0.05$) but between the control-topical group and the oral-topical group there were significant differences ($p < 0.05$). Day 7 there were no significant differences in either group ($p > 0.05$) or between treatment groups ($p > 0.05$). Day 14 there were significant differences in each treatment group ($p < 0.05$). There were significant differences between the control-oral group and the control-topical group ($p < 0.05$), where in the oral-topical group there were no different meanings. Day 21 shows the same results as the 14th day.

Conclusion: Giving EEW for up to 7 days has not provided effective results for decreasing the number of osteoclasts. Giving EEW is quite effective on day 14, so also on day 21 shows the same results. The decrease in the number of osteoclasts by oral and topical administration on days 14 and 21 gave the same effect.

Keywords: Lumbricus rubellus extract (EEW); Oral, Topical, Osteoclast cells.

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