



## Expression of *OPG*, *RANKL*, and *RUNX2* in rabbit periodontium under orthodontic force

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**ABSTRACT.** This study aims to investigate the expression changes of *RANKL*, *RUNX2*, and *OPG* in rabbit periodontal tissues under orthodontic force and explore its effect on the remodeling of periodontal tissues. A total of 16 specific pathogen-free rabbits were used in this study. The maxillary appliance was worn on the right (experimental) side, and the appliance-free left side was used as the control. Rabbits were sacrificed after 3, 5, 7, and 14 days of treatment. Changes in the expression levels of *OPG*, *RANKL*, and *RUNX2* in the periodontium were detected using real-time PCR and western blotting methods. The *OPG* expression levels decreased after 3 to 14 days of treatment, while the expression levels of *RANKL* and *RUNX2* increased after 3 to 14 days. The *OPG* expression levels decreased while those of *RANKL* and *RUNX2* increased during orthodontic tooth movement,

which suggested that they play a role in the osteogenesis process and the reconstruction of periodontal tissue.

**Key words:** Orthodontic force; Periodontium; *OPG*; *RANKL*; *RUNX2*; Western blotting