



**Figure 7. Periosteal Stimulation Increases inflammation and the number of TRAP-positive cells.** To study the effect of TRAP-positive cells on bone formation we increased the number of TRAP-positive cells in the periosteum by periosteal stimulation with small needles in the area of the second maxillary molar. Change in expression of CCL2, IL-1 $\alpha$ , RANK, RANKL and Cathepsin K (Ctsk) in the soft tissue covering the cortical plate of posterior teeth was measured by RT-PCR at different time points. Data are expressed as mean  $\pm$  SD “fold” change in expression in comparison to control. Each value represents the average of 5 samples. \*Significantly different from static group at the same time point,  $p < 0.05$ ) (A and B). Immunohistochemistry for TRAP was performed in paraffin section of both “static” and “static + stim” groups to identify TRAP-positive cells in the periosteum of maxillary alveolar bone. Representative light microphotographs show TRAP-positive osteoclasts in surface of cortical bone at 3 and 7 days (C). Mean numbers of TRAP-positive cells at different time points, in the area between the mesial border of the mesial roots of the first molars and distal border of the distal roots of the second molars. Each value represents the mean  $\pm$  SD of five animals. \* Significantly different from control,  $p < 0.05$  (D).