##C265019 : ORTHODONTICS
KEY WORD : ALVEOLAR BONE RESPONSE/ ORTHODONTIC FORCE/ SODIUM FLUORIDE
CHAIRAT CHALERMRATTANAROJ : ALVEOLAR BONE RESPONSE TO ORTHODONTIC FORCE IN WISTAR RATS FOLLOWING THE UPTAKE OF SODIUM FLUORIDE IN DRINKING WATER. THESIS ADVISOR : PROF. WATANA MATHURASAI, 80 PP.
ISBN 974-581-674-4

The objective of this study was to investigate the effects of the fluoride on the histologic responses of the alveolar bone to the normal function and to the orthodontic force as well.

The sample consisted of 12 male wistar rats, aged 30 days from the Department of Biology, Faculty of Science, Chulalongkorn University. Animals were randomly disignated for the control and experimental groups. Each group comprised of 6 animals. All were fed under the same environment except for the experimental group had sodium fluoride 10 ppm in drinking water while the control group had only distilled water. After 30 days of feeding,the left maxillary first molar of each animal was retracted by the close coil spring with 40 gram forces for 5 days. The histologic responses of the alveolar bone to the normal function and to the orthodontic force were scrutinized from the serial sections which were made from the buccal to the lingual sides of the alveolar bone, both on the left and right first molars.The significant differences in the number of osteoclasts and osteoblasts at the mesial region of the mesiobuccal roots between the control and experimental groups were tested by student t-test at 0.05 level.

The results indicated that the histologic responses of the alveolar bone to the normal function as well as to the orthodontic force between the control group and experimental group were different. The number of osteoclasts and osteoblasts on the tension and the pressure sides of the experimental group were significantly larger than that of the control group ($P<0.05$). These supported the hypothesis that fluoride had the effects on the alveolar bone by increasing the number of osteoclasts and osteoblasts.