

## The Effects of Chitin Derivative and Hydroxyapatite Compound in Canine Bone

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Chitin and chitosan have been demonstrated to act as wound healing accelerators and are now used in human and veterinary medicine. Chitin derivative are biocompatible and can be degraded by enzymes in human body, and the degradation product is nontoxic. In this study, the bioactivity of chitin-hydroxyapatite and chitosan-hydroxyapatite was examined in canine bone.

Ten mongrel dogs aged about 3 ( $3.0 \pm 2.4$ ) years, body weights about 4 ( $4.2 \pm 2.7$ ) kg were used in this study. Fifty percent chitin-hydroxyapatite and 50% chitosan-hydroxyapatite was inserted in bilateral bipolar femur changes in the hematobiochemiocl, radiology, histological profiles were observed for 42 days.

Three weeks after, was observed in expanded radioluscent area at 50% chitin-hydroxyapatite and 50% chitosan-hydroxyapatite inserted border was observed. Six weeks after, thesis observed little bony tissue in 50% chitin-hydroxyapatite's surround through the bone section was noticed. An increased amount of bone formation (osteogenesis) was observed at the 50% chitin-hydroxyapatite inserted sites in comparison that of the 50% chitin-hydroxyapatite inserted site.

Histopathologically, are increased in the infiltrarion of inflammatory cells and bone absorption was observed in both, 50% chitin-hydroxyapatite and 50% chitosan-hydroxyapatite; however an increased active osteogenesis was noticed in 50% chitosan-hydroxyapatite inserted sites.

In conclusion, new bone was generated at the edges of the chitosan-hydroxyapatite more than 50% chitin-hydroxyapatite insert sites. Therefore, these results indicate that 50% chitosan-hydroxyapatite would cause active osteogenesis more than 50% chitin-hydroxyapatite in bone in dogs.

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