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[\[Image PDF \(2183K\)\]](#) [\[References\]](#)**Effects of Different Sizes of β -tricalcium Phosphate Particles on Bone Augmentation within a Titanium Cap in Rabbit Calvarium**[Masakazu MURAI](#)¹⁾, [Shuichi SATO](#)²⁾³⁾, [Yasumasa FUKASE](#)⁴⁾⁵⁾, [Yutaka YAMADA](#)²⁾³⁾, [Kazuo KOMIYAMA](#)⁶⁾⁷⁾ and [Koichi ITO](#)²⁾³⁾

1) Nihon University Graduate School of Dentistry

2) Department of Periodontology

3) Division of Advanced Dental Treatment, Dental Research Center, Nihon University School of Dentistry

4) Department of Dental Materials

5) Division of Biomaterials Science, Dental Research Center, Nihon University School of Dentistry

6) Department of Pathology

7) Division of Immunology and Pathobiology, Dental Research Center, Nihon University School of Dentistry

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Abstract:

This study evaluated the effects of different sizes of β -TCP particles on bone augmentation within a titanium cap. In 20 rabbits, the calvarium was exposed and a circular groove was prepared. After marrow penetration, a standardized hemispherical titanium cap was placed in the circular groove. The cap was filled with small-sized (100-250 μ m) or medium-sized (250-500 μ m) β -TCP particles for the experimental site and without β -TCP for the control site. After one and three months of healing, the animals were euthanized and examined histologically. There was a statistically significant difference in the amount of mineralized bone generated between the experimental and control groups in the three-month specimens. Furthermore, the medium-sized particles showed significantly more mineralized bone than

did the small-sized particles. Based on these findings, we suggested that β -TCP might be effective for bone formation and that medium-sized particles are more useful than small-sized particles in bone maturation.

Key words:

[\$\beta\$ -TCP](#), [Particle size](#), [Bone augmentation](#)

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