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[\[Image PDF \(824K\)\]](#) [\[References\]](#)**Comparison of Osteogenic Potential Between Apatite-Coated Poly (Lactide-Co-Glycolide)/Hydroxyapatite Particulates and Bio-Oss[®]**[Sang-Soo KIM^{1\)}](#) and [Byung-Soo KIM^{1\)}](#)

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Abstract:

Previously, we developed a poly(lactide-co-glycolide)/nano-hydroxyapatite (PLGA/HA) composite that overcame the limitations of conventional ceramic bone substitutes. This was achieved by introducing a bone-like apatite layer on the composite to further enhance its osteogenic potential. In this study, we compared the osteogenic potential of the apatite-coated PLGA/HA particulates to that of Bio-Oss[®], a deproteinized bovine bone material. A mixture of fibrin gel and either apatite-coated PLGA/HA particulates or Bio-Oss[®] was implanted into critical-size rat calvarial defects. As a control, fibrin gel was implanted alone into the defects. At eight weeks after treatment, histological examination showed new bone formation around the grafting materials, and bone formation was similar between the two groups. In the control group, bone was not regenerated and the defects were filled with fibrous tissues. This study showed that a synthetic bone graft material, apatite-coated PLGA/HA particulates, had a comparable bone regeneration potential to the bovine-derived bone graft material, Bio-Oss[®].

Key words:[Apatite coating](#); [Bio-Oss[®]](#), [Bone regeneration](#)

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