

Author: [ADVANCED](#)

Volume Page

Keyword: [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1881-1361

PRINT ISSN : 0287-4547

Dental Materials Journal

Vol. 26 (2007) , No. 2 p.170-177

[\[PDF \(613K\)\]](#) [\[References\]](#)**Development of New Drug Delivery System for Implant Bone Augmentation Using a basic Fibroblast Growth Factor-gelatin Hydrogel Complex**[Kazuhiko HAYASHI](#)¹⁾, [Takayasu KUBO](#)¹⁾, [Kazuza DOI](#)¹⁾, [Yasuhiko TABATA](#)²⁾ and [Yasumasa AKAGAWA](#)¹⁾

1) Department of Advanced Prosthodontics, Division of Cervico-Gnathostomatology, Programs for Applied Biomedicine, Hiroshima University Graduate School of Biomedical Sciences

2) Department of Biomaterials, Institute for Frontier Medical Sciences, Kyoto University

(Received September 11, 2006)

(Accepted November 7, 2006)

Abstract:

This study sought to clarify the effectiveness of bFGF-gelatin hydrogel complex on bone regeneration around implants for the development of a new drug delivery system for bone augmentation. Twenty-four titanium implants ($\phi 3.3$ mm \times 10 mm) were placed into edentulous areas of the mandibles of four beagle dogs with the upper four screw threads exposed at buccal side. bFGF-gelatin hydrogel complex with 0, 0.1, 1, 10, 100 μ g bFGF or autogenous bone (as control) then filled the bone defect site to cover the exposed screw threads. After eight weeks, tissue specimens including implants were evaluated histologically and histomorphometrically. Histological observation showed new bone formation around exposed screw threads in the groups with 1, 10, 100 μ g bFGF and autogenous bone—a striking contrast to the groups with contents of 0 and 0.1 μ g bFGF. These results thus suggested that bFGF-gelatin hydrogel complex using an optimum amount of bFGF was useful for bone augmentation around implants.

Key words:



[\[PDF \(613K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Kazuhiko HAYASHI, Takayasu KUBO, Kazuya DOI, Yasuhiko TABATA and Yasumasa AKAGAWA. Development of New Drug Delivery System for Implant Bone Augmentation Using a basic Fibroblast Growth Factor-gelatin Hydrogel Complex . Dent. Mater. J. 2007; 26: 170-177 .

doi:10.4012/dmj.26.170

JOI JST.JSTAGE/dmj/26.170

Copyright (c) 2009 The Japanese Society for Dental Materials and Devices



[Japan Science and Technology Information Aggregator, Electronic](#)

