

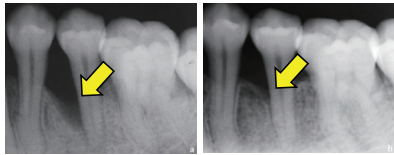
Development of Periodontal Regeneration Therapy for Horizontal Alveolar Bone Resorption using Collagen-binding Basic Fibroblast Growth Factor

コラーゲン結合型塩基性線維芽細胞増殖因子を用いた水平性歯槽骨吸収に対する歯周組織再生療法の開発

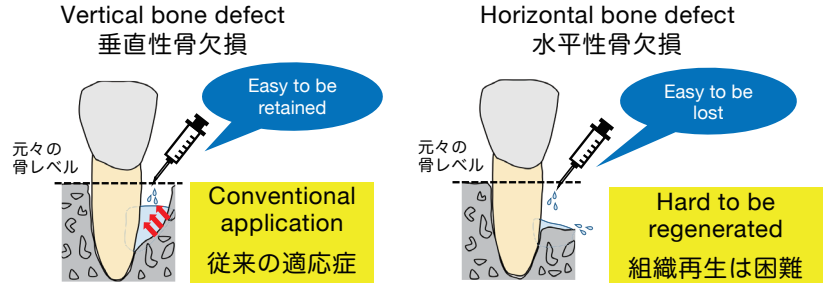
Shogo Takashiba 大学院医歯薬学総合研究科(歯) 歯周病態学分野 教授 高柴正悟

Periodontal Regeneration Therapy using Growth Factor 増殖因子を用いた歯周組織再生療法

Application of bFGF has been started.
塩基性線維芽細胞増殖因子の応用がスタート



Yoshinuma, et al, 2016



The application depends on bone defect morphology. 適応症は骨欠損形態へ依存する

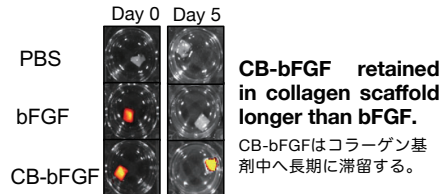
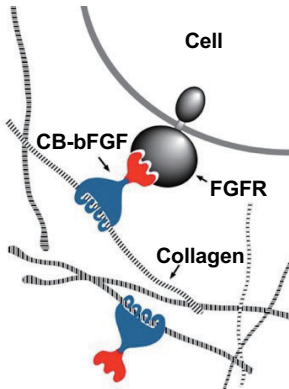
We Focused on Collagen Anchoring! コラーゲン結合活性に注目! Biological mimetics

Collagen-binding bFGF; CB-bFGF

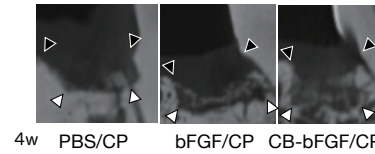


CB-bFGF is consisted on bFGF and collagen binding domain derived from collagenase of *C. histolyticum*. CB-bFGF can bind collagen fiber.

CB-bFGFはbFGFとガス壊疽菌*C. histolyticum*由来のCBDから構成され、コラーゲン線維へ結合する。



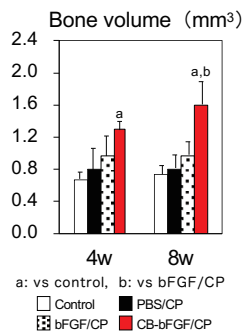
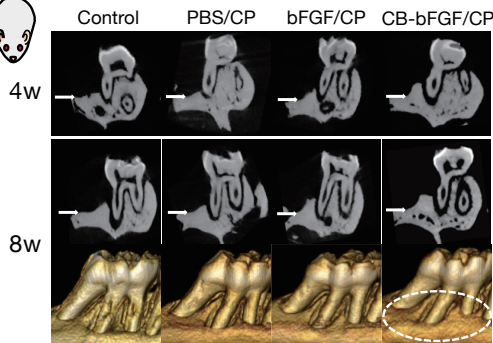
Vertical bone defect model



The efficacy exerted in vertical bone defect. イヌの垂直性骨欠損で有効性を確認した。 CP: collagen powder

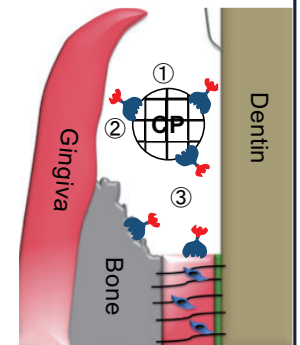
Anchoring growth factor to collagen fiber by CBD for local and prolonged effect.
CBDによってコラーゲン線維に結合し、局所的・持続的に作用

Application of CB-bFGF as a Periodontal Regeneration for Horizontal Bone Defect 水平性骨欠損における歯周組織再生に対するCB-bFGFの応用



CB-bFGF/CP promoted horizontal alveolar bone formation in rats. CB-bFGF/CPは、ラットの水平性骨欠損において骨形成を促進した。

- ① Formativeness 適度な賦形性
→ Keeping regeneration space 再生スペースの保持
- ② Retention in collagen scaffold 基剤中への滞留
→ Sustained release of growth factor 増殖因子の徐放
- ③ Retention in local tissue 局所組織中への滞留
→ Prolonged efficacy of stimulation of stem cells 持続的に幹細胞を刺激し、増殖因子の作用を増強



Nakamura, et al, 2019

Enables application of horizontal bone defect 水平性骨欠損に応用可能

Development of Drug Delivery System using Collagen-binding Domain コラーゲン結合ドメインを用いた薬物送達システムの開発へ

Contact

Department of Pathophysiology – Periodontal Science, Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University
Tel +81-86-235-6675, E-mail stakashi@okayama-u.ac.jp

