

Properties of Human Perforated Demineralized Dentin Matrix and its Efficacy for Bone Regeneration In Tri-Cortical Critical Defect of Sheep Iliac Bone


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学位名	博士（歯学）
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学位論文審査並びに最終試験結果報告書

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副査 三浦美英



今般 Md. Arafat Kabir にかかわる学位論文審査並びに最終試験を行い下記の結果を得たので報告する。

記

- | | |
|-------------|---|
| 1 学位論文題目 | Properties of Human Perforated Demineralized Dentin Matrix and its Efficacy for Bone Regeneration In Tri-Cortical Critical Defect of Sheep Iliac Bone |
| 2 論文要旨 | 別添 |
| 3 学位論文審査の要旨 | 別添 (様式第12号) |
| 4 最終試験の要旨 | 別添 (様式第13号) |

以上の結果 Md. Arafat Kabir は博士 (歯学) の学位を授与する資格のあるものと判定する。

様式第 12 号

学位論文審査の要旨

主査

安部善裕



副査

三浦美英



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高子正裕



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氏 名

Md. Arafat Kabir (ムハンマド アラファト カビール)

学位論文題目

Properties of human perforated demineralized dentin matrix and its efficacy for bone regeneration in tri-cortical critical defect of sheep iliac bone

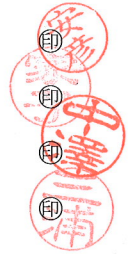
Human perforated demineralized dentin matrix (DDM) is defined as acid-insoluble, cross-linked collagen with growth factors. The aims of this study are to analyze the fundamental characteristics of the perforated root-DDM, and to assess its efficacy for bone regeneration in a tri-cortical critical defect of sheep iliac bone. Thirty perforations (1.0 mm in diameter) were added to the human vital wisdom tooth and partially demineralized. Free of bacteria was confirmed after the demineralization processing. The acid-insoluble dentin collagen was predominantly digested by collagenase in vitro. New bone was connected directly with the grafted root-DDM at 2 months in vivo. The amount of bone tissue in the perforated root-DDM at 4 months was significantly higher than that at 2 months. This study demonstrates that the perforated root-DDM with artificial 30 pores (1.0 mm in diameter) contributed to bone formation as the unique scaffold. Therefore, this novel technique using the tooth-derived materials can be a realistic alternative for bone graft.

It is clear the purpose and scientific interest of this study. The experimental design including materials and methods were appropriate. This study demonstrates that the perforated root-DDM with artificial 30 pores (1.0 mm in diameter) contributed to bone formation as the unique scaffold, indicating that the perforated root-DDM may be a promising candidate as bone graft material. It is highly valuable as it deals with an important issue in bone regenerative field. The study will contribute to the future development of the dental sciences and is deemed worthy as a Ph.D by the reviewers.

様式第13号

最終試験（学力の確認）の要旨

主査 安藤 善裕
副査 金子 正徳
副査 中澤 太
副査 三浦 美穂



氏 名 Md. Arafat Kabir

審査委員会において、最終試験を行い申請者の学力の確認を行ったところ、学位論文に関する十分な知識と研究遂行能力を有するとみとめた。以上の結果、博士（歯学）の学位を授与するに値するものと判定した。