時間変更のお知らせ

東京医科歯科大学

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国際的に卓越した教育研究拠点形成のための重点的支援

# 第47回グローバルCOE海外研究者講演会

## 歯と骨の分子疾患科学の国際教育研究拠点

### ーデント・メドミクスのインテリジェンスハブー

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日時：2011年9月26日（月） 15：30～

場所：歯学部4階特別講堂

演題：“Role of transglutaminase-enzymes and matrix stabilization in bone formation and maintainance of adult bone mass“

**Abstract:**

The process of bone formation is orchestrated by osteoblasts under the systemic control of hormones, cytokines and local factors residing in the extracellular matrix of bone. Osteoblasts deposit their own matrix which is also known to control osteoblast differentiation and transition from preosteoblast to mature, mineralizing osteoblast. Our work is focused on understanding the role of transglutaminases - protein crosslinking and stabilizing enzymes - during bone formation. New findings from cell culture studies and from the double-knockout mouse null for both TG2 and Factor XIIIA – the two transglutaminase enzymes expressed by osteoblasts and which have proposed compensatory functions – indicate that both these TGs are required for maintaining adult bone mass. Mice lacking the two enzymes are severely osteopenic. Furthermore, TG2 and FXIIIA might regulate the switch where osteoblast differentiation is directed either towards osteogenesis or adipogenesis. Suggestions for molecular mechanisms by which TG2 and FXIIIA could drive osteoblast differentiation via regulating and stabilizing cell adhesion, matrix deposition and matrix stability will be presented. Differences, as well as synergistic and overlapping functions, of TG2 and FXIIIA will be discussed.

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