

健康長寿社会の実現に寄与する先端医歯工学研究拠点形成  
医歯工連携による医療イノベーション創出事業  
～生物学と工学を融合したバイアブルマテリアルの学術形成～

## Challenges and Possibilities in Clinical Translation of Protein Delivery and Gene Silencing

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Society (TERMIS)



**日時: 平成29年12月8日(金) 13:00~14:00**

**場所: 東京医科歯科大学 生体材料工学研究所  
22号館1階 第2会議室**

Abstract: Bone repair by tissue engineering systems has attracted broad attention. Bone morphogenetic proteins (BMPs) remain the most potent inducers of bone formation. BMP-2 efficacy in a clinical setting is remarkably low and delivery of supraphysiological (milligram) doses of the growth factor are needed to obtain therapeutic effects. We have developed improved gel-based methods of protein delivery and brought this to patient trials and commercial application by creation of start-up companies. In addition, we have developed and patented concepts in translocating mRNA through the cell membrane and out of the endosome using safe and nontoxic methods to affect target cells on the gene expression level instead of the protein level.

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