

Global COE Program

# グローバルCOEプログラム

・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・

## 大学院特別講義 (医歯学先端研究特論)

### 第35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

講師: **Professor Songlin Wang**

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Tooth Regeneration, School of Stomatology  
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日時: 平成22年12月22日(水) 16:30~18:00

場所: 歯学部特別講堂(歯科外来事務棟4階)

## 演題: **Orofacial Tissue Regeneration and Function Reconstruction in Swine**

Miniature pigs have been extensively used as a large animal model in biomedicine. We have used miniature pigs for studying the development of the tooth, dental stem cells-based bio-root regeneration, periodontitis model and autologous or allogeneic periodontal ligament stem cell-based therapy, osteroradionecrosis model and mesenchymal stem cell-based therapy. We developed a convenient large animal model for gene transfer to salivary glands and parotid gland irradiation damage model in miniature pigs. After AdhAQP1 delivery, saliva flow rate in radiated glands recovered from 20% up to 85% of pre-irradiation level for about 1 week, while after AAV2AQP1 transfer, salivary flow rate increased up to ~35% of pre-irradiation levels for 8 weeks. Our studies demonstrated that dental stem cell-based bio-root, periodontal, bone tissue regeneration and gene transfer-mediated salivary function restoration have been achieved in miniature pigs at pre-clinical level. Miniature swine is a useful large animal model in dental and orofacial research, especially for typical translational medicine studies in dentistry.

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