

TAKASHI OKIJI



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Department of Pulp Biology & Endodontics, Graduate School of Medical & Dental Sciences, Tokyo Medical & Dental University (TMDU)

Takashi Okiji is Professor of Department of Pulp Biology and Endodontics, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University (TMDU). He graduated from Faculty of Dentistry, TMDU in 1984, completed the doctoral course in the Graduate School, TMDU and received PhD in 1988. He also obtained PhD from the University of Gothenburg in 1996. He started his professor position in Niigata University in 2001 and moved to the current position in 2015. He is a Past-President of the Japanese Society of Conservative Dentistry (2015-2017) and Treasurer of the Japan Endodontic Association. He serves as a member of the editorial board of the International Endodontic Journal and acts as a reviewer for a number of scientific journals.

Okiji has published over 120 peer-reviewed papers in international journals and wrote several book chapters including "Seltzer and Bender's Dental Pulp". His research interest includes dental pulp repair/regeneration, endodontic materials and Ni-Ti rotary instrumentation.

DEFENSE, REPAIR AND REGENERATION OF THE DENTIN/PULP COMPLEX: A BIOLOGICAL BASIS FOR VITAL PULP THERAPY

The predictability of vital pulp therapy is still a matter of controversy, especially when the pulp is exposed to the oral environment. However, the dental pulp is provided with inherent potential of defense and repair that plays an essential role in the maintenance of the integrity of this tissue. The pulp is equipped with an immunodefence system composed of dendritic cells, which are able to cope with exogenous bacterial stimuli by acting as antigen presenting cells that detect trans-dentinal antigenic challenges and initiate T cell-mediated immune responses. The healing of the injured dentin/pulp complex is characterized by reparative dentinogenesis. This process involves complex cellular and molecular events leading to hard-tissue repair by newly differentiated odontoblast-like cells, which differentiate from mesenchymal stem cells and/or progenitor cells. Clinically, bioactive endodontic cements such as mineral trioxide aggregate are currently regarded as the gold standard for direct pulp capping due to their excellent biocompatibility, bioactivity and sealing ability. Several recent experimental studies have demonstrated promising results regarding pulp tissue

regeneration following implantation of mesenchymal stem cells into pulpotomized pulp or pulpectomized teeth.

This presentation will summarize recent knowledge on the defense, repair and regeneration of the dentin/pulp complex, which comprises a basis for the success of vital pulp therapy and near-future advancement of regenerative pulp therapy.

