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Application of proteins or peptides on implant surfaces and their effects on biologic responses at bone-implant interfaces

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Abstract

Considerable effort has been directed towards replacing lost teeth using tissue-engineering methods such as titanium implants. A number of studies have tried to modify bioinert titanium surfaces by coating them with functionally bioactive molecules for faster and stronger osseointegration than pure titanium surfaces. A bone morphogenetic protein is known to be an osteoinductive molecule to promote local bone formation. Recently, peptides have been recognized as valuable scientific tools in the field of tissue engineering. A laminin-derived functional peptide, the DLTIDDSYWYRI motif, has been evaluated for bone cell adhesion and in vivo effects on osseointegration. Many findings indicate that such a protein or peptide may act as an effective osseointegration accelerator. This presentation contains author's studies showing the results of active responses at bone-implant interfaces.

Biography

In-Sung Yeo has completed his military service as a captain at Special Operations Forces, Korea, and his PhD, including a clinical fellowship program, at the age of 32 years from Seoul National University. He is an Assistant Professor at Seoul National University, and the Program Director of Department of Prosthodontics, Seoul National University Dental Hospital. He has published more than 20 papers (including 2 papers in the field of physics) in reputed journals.