

Symposium II-3

Bone Formation of rhBMPs using Various Biomaterials as Carriers



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Bone morphogenetic proteins (BMPs) are regarded as members of the transforming growth factor- β superfamily owing to characteristic features in their amino acid sequences. It has been reported that rhBMP by itself is sufficient to induce bone formation in vitro and in vivo. Currently, more than 20 bone morphogenetic proteins (BMPs) have been identified and many trials have been carried out using recombinant human BMPs (rhBMPs) for bone tissue engineering. However, the gap between research and the clinical use of rhBMPs still remains since the rapid diffusion of the water soluble protein rhBMP from the implantation site will reduce its osteoinductive effect. Therefore, carrier systems are essential for delivering rhBMPs, in order for its osteoinductive effect to be achieved.

Various carrier systems for rhBMPs have been investigated, including tricalcium phosphate (TCP) absorbable collagen sponges (ACS), polylactic acid polymer and various bovine and human bone allografts with a variety of results.

We have previously shown that rhBMPs, when incorporated in biomaterials including ACS, β -TCP, and fibrin gel, promoted a significant increase in new bone formation in the rat calvarial/subcutaneous defect models. Present presentation will discuss the carrier systems for rhBMPs for future clinical use.

주요 학력 및 경력 :

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