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姉妹校交流招待講演

Advances of stem cell and PRP therapy in cartilage regeneration

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Stem cell and growth factors have been utilized for cartilage regeneration in skeletal system. We focused on degenerative intervertebral disc (IVD) and arthritic articular cartilage. We have created immortalized chondrocyte and nucleus pulposus cell lines as regenerative platform. In IVD regeneration, both platelet-rich plasma (PRP, growth factor enriched complex) and mesenchymal stem cells (MSCs) treatments have been demonstrated to regenerate disc tissue in in vivo and in vitro model. Moreover, a phase I/II clinical trial of PRP for the human IVD therapy has also been conducted by our research group. In arthritic treatment, we found that MSCs can be committed to chondro-progenitors by mature articular chondrocytes, and further demonstrated that cord blood-MSCs (CB-MSCs) possess specific advantages in cartilage regeneration over bone marrow-MSCs. CB-MSCs with anti-inflammatory capacity showed a better therapeutic potential that can contribute to advanced cell-based transplantation for clinical osteoarthritis therapy.

《プロフィール》



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