Regenerating Articular Cartilage with Heparin Sulfate Hydrogels using Human Bone Marrow Mesenchymal Stem Cells

Stiggers, Qwantayvious

Within the increasing of age problems arise within your connective tissues. The most common connective tissue Articular Cartilage brings many problems to the body that deal with mobility. The aim of my research project was to create a hydrogel to address the issues of damaged arthritic in order to ease or prevent pain. By altering the mechanical stiffness of the hydrogel influencing the polymer's cross-linking density it would drive the cells to produce similar features of chondrocytes. The overall goal of the research project was to mimic articular cartilage mechanical properties to influence the cells secretions and differentiations. There were a number of assays involved such as Nuclear Magnetic Resonance, Photo-Polymerization of hydrogels, Histology Staining, RNA Isolations, Mechanical Testing and also Immunochemistry, Biocompatible materials were used to Regenerate Articular Cartilage.

Awards Won: