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Abstract

An injury to the cartilage is a physical disruption of the cartilage's architecture, resulting in fluid loss and pain to the individual. The earliest possible diagnosis of various cartilage defect complications is vital to facilitate healing. Moreover, to fasten the healing process of the cartilage defect, tissue-engineered materials should have several key characteristics, including ideal porosity, and minimal cytotoxicity. The primary characteristic of polymeric hydrogel scaffolds is that they offer a moist environment that accelerates the cartilage repair and good biocompatibility. Most often, biocompatible polymers and incorporated agents (such as stem cells, drug molecules, and bioactive agents) exhibit synergistic effects, resulting in very high therapeutic indexes. This review highlights the phases of cartilage repair, types of natural and synthetic Polymer loaded hydrogels used in Cartilage tissue regeneration, and the importance of the stem cells loaded hydrogel in cartilage tissue engineering concepts.

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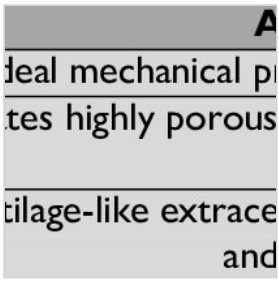

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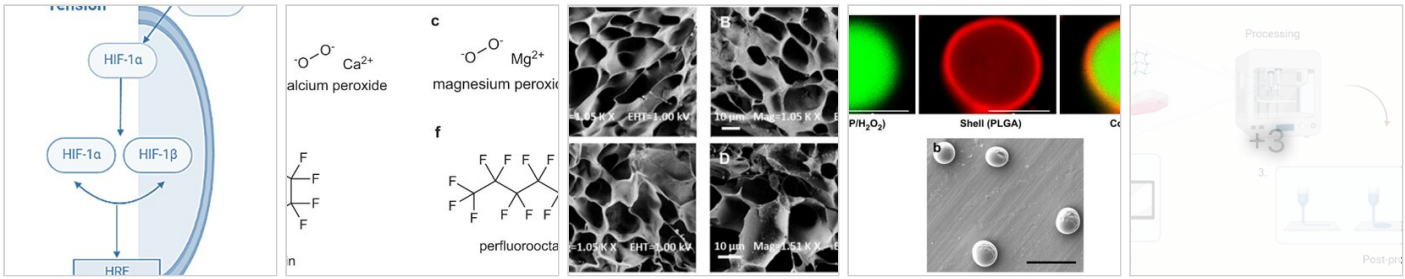

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