Tunable Polymer Networks For Medicine And Biotechnology

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Technology description

This invention embodies a platform technology consisting of a polymer matrix that aids in cell transplantation for either tissue formation ex vivo or tissue regeneration in vivo, drug or chemotherapy agent delivery, and gene therapy. Ideally, these matrices can deliver mammalian cells, and/or therapeutic agents into the body and act as three-dimensional templates to support and promote tissue growth. These polymer networks are tunable in terms of their delivery, drug dosing, and mechanical and biochemical properties. The polymer networks are injectable through minimally invasive methods, and do not exhibit macroscopic fracture following injection.

Application area

These polymer networks have enormous potential in the fields of:
Tissue engineering
Cell transplantation
Wound healing
Chemotherapy
Drug delivery
Interventional cardiology and radiology
Orthopedic and maxillofacal surgery, and
Gene therapy.

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