GROWTH FACTOR SEQUESTERING AND PRESENTING HYDROGELS

Tech ID: 22482 / UC Case 2012-118-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,827,272	11/28/2017	2012-118

BRIEF DESCRIPTION

The encapsulation of stem cells in a hydrogel substrate provides a promising future in biomedical applications. However, communications between hydrogels and stem cells is complicated, for example, factors such as porosity, different polymer types, stiffness, compatibility and degradation will lead to stem cell survival or death. Hydrogels mimic the three-dimensional extracellular matrix to provide a friendly environment for stem cells.

UC Berkeley researchers have developed hydrogel cell matrices for the support, growth, and differentiation of a stem cell or progenitor cell and methods for making such hydrogel cell matrices.

SUGGESTED USES

- Cardiac tissue engineering
- Reinforcement of scleral tissue
- Fat tissue engineering
- Wound healing matrix
- Drug delivery

ADVANTAGES

- Increases survival and engraftment of transplanted stem cells
- Hydrogel has tuneable release kinetics and degradation rate

CONTACT

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INVENTORS

- Healy, Kevin E.

OTHER INFORMATION

KEYWORDS

Hydrogel, tissue engineering, stem cell, polymer, biocompatible, biodegradable

CATEGORIZED AS

- **Materials & Chemicals**
  - Polymers
- **Medical**
  - Delivery Systems
  - Research Tools
  - Stem Cell
- **Nanotechnology**
  - NanoBio

RELATED CASES

2012-118-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Universal Coating Compound
- Design And Fabrication Of Polymeric Pillar Arrays As Diffusion Barriers

- Isolation Of Cardiac Stem/Progenitor Cells Expressing Islet-1
- Formation Of Porous Scaffolds Of Growth Factor Sequesting Hydrogels By Cryogelation
- Novel Solid Lipid Nanoparticle To Improve Heart Cardio Protection
- Bioinspired Hydrogels for the Treatment of Volumetric Muscle Loss Injury

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