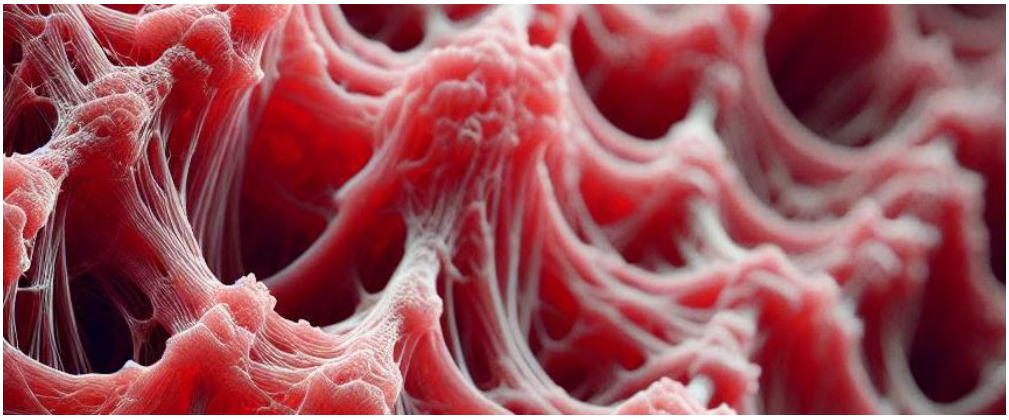
NovaUCD
Technology Licensing Opportunity

Rapid 3D Tissue Formation In Vitro

Rapid method to create 3D tissue substitutes using macromolecular crowding



Opportunity

Regenerative medicine strives to restore damaged tissues by harnessing the body's innate healing potential and advancing cell-based therapies. The field has long depended on techniques involving cell-scaffold combinations and tissue engineering to mimic the natural extracellular matrix but this has many limitations. These approaches often require extensive cell numbers and prolonged culture times.

Technology Overview

The process employs a unique combination of three-dimensional scaffolds and macromolecular crowders to culture cells for rapid forming 3D tissues.

The method accommodates various eukaryotic cell types, including differentiated cells and stem cells, and can be executed using serum-supplemented or serum-free culture media.

Additionally, the process harnesses the properties of natural and synthetic macromolecular crowding agents to accelerate extracellular matrix deposition, making it applicable for regenerative therapies including wound healing and cartilage regeneration.

Key Features/Advantages:

- Accelerates extracellular matrix deposition.
- Reduces required cell numbers and culture time .
- Promotes scaffold-free tissue production with enhanced cell organization and minimized immune responses.
- Offers versatility by accommodating various cell types and both serum-supplemented and serum-free culture conditions.
- Enables efficient fabrication of thick, multi-layered tissues for diverse applications such as wound healing and nerve regeneration.

Value Proposition:
Technology to accelerate extracellular matrix deposition, reduce required cell numbers, and shorten culture time for regenerative medicine

Markets:
Regenerative wound healing substitute.
Nerve regeneration tissue product.
Cartilage regeneration tissue substitute.

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