

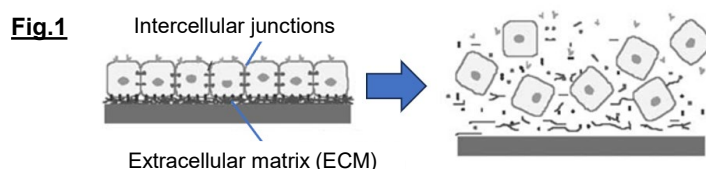
New Method for Easy-to-Handle Cell Sheet Fabrication

We are looking to out-license the technology for its commercialization.

Preserves cell sheet structure and minimizes cell damage by eliminating the need for detachment from the culture substrate.

◆Background

Cell sheets are widely used in stem cell research, including iPS cell and organoid studies, for disease modeling and therapeutic development. Conventional methods require detaching the sheet from the culture substrate, which can damage its structure (Fig. 1). Although temperature-responsive substrates and other approaches have been developed, structural disruption remains difficult to solve.



◆Description

Researchers at Kyoto University have developed a simple method for producing cell sheets with preserved structural integrity using density gradient centrifugation. The method also enables the assembly of multilayered cell structures from multiple cell sheets. In addition, the resulting cell sheets can be further cultured and matured (Fig. 2(a) and (b)).

➤ Simple process for cell sheet fabrication

Simple fabrication and easy recovery using only a cell suspension, centrifuge, and biocompatible medium.

➤ Compatible with various cell types and multilayered structures

Enables the development of multilayered tissue models by combining diverse cell types.

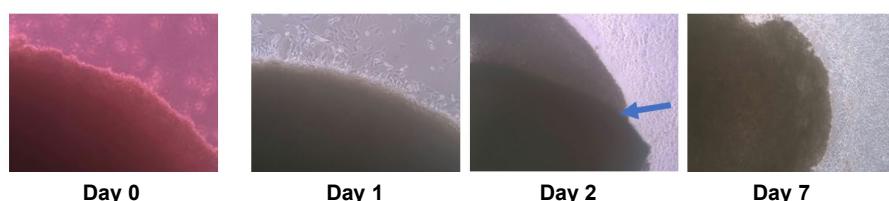


Fig. 2(a) Changes in C2C12 cell sheets over time after preparation

The cell sheets were further cultured after fabrication. Two days later, morphological changes, including cell overlap, were observed (blue arrows), indicating retained cell viability and proliferative capacity.

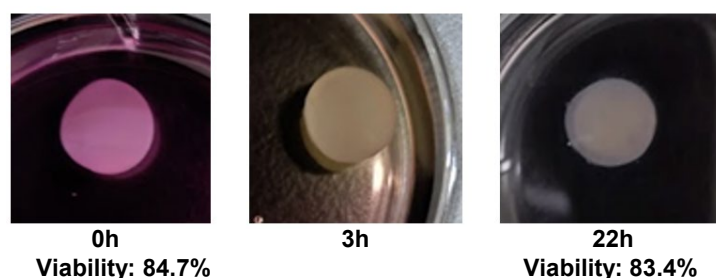


Fig. 2(b) Viability of HeLa cell sheets

Cell sheets were maintained in suspension and evaluated at 0, 3, and 22 hours after culture initiation. Cell viability and sheet morphology remained stable throughout the culture period.

◆Development Status

- Lab-scale cell sheet fabrication process established
- Ongoing research on cell sheet fabrication using multiple cell types

◆Potential Applications

- Regenerative medicine
- In-vitro tissue models
- Research tools

◆Offer

- Patent License
- Option for License
- Collaborative Research

◆Contact

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