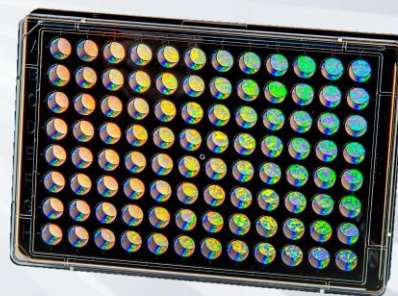
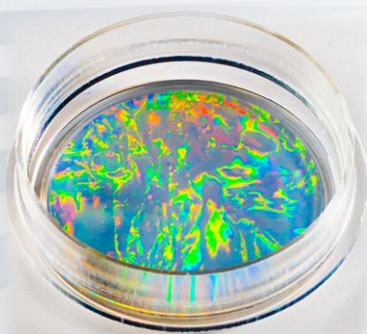


Effortless, Unidirectional Cell Alignment — Just by Seeding CellArray-Heart™

35mm Dish

35mm Dish
Treated with UpCell®

96 Well Plate

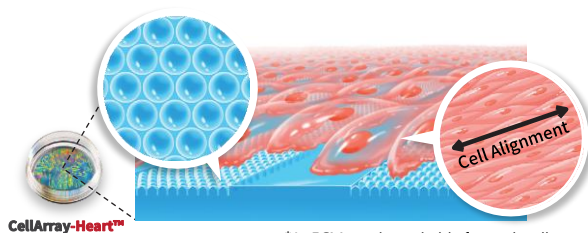


Just Seed — And Cells Align. *

CellArray-Heart™ is a next-generation planar culture substrate engineered to achieve precise and consistent cell orientation. Its alternating microstructured and flat surface stripes naturally guide cells into a uniform, unidirectional alignment-without any additional handling or external stimulation. Human iPSC-derived cardiomyocytes, skeletal muscle cells, fibroblasts, neurons, and many other cell types reliably align along a single axis, enabling highly reproducible assays across a wide range of research fields.

Ideal Applications

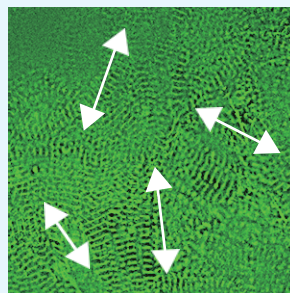
- Contraction-velocity, directionality, and sarcomere-integrity assays
- Tissue engineering and regenerative medicine
- Layered myocardial sheet constructs
- Axonal alignment and guidance models



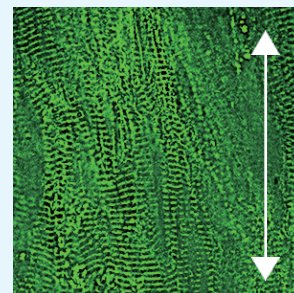
*An ECM coating suitable for each cell type is required.

Enhanced Structural Maturation
for More Reliable Functional Assays

Compared with conventional substrates, cardiomyocytes cultured on CellArray-Heart develop more uniformly aligned sarcomere structures, indicating enhanced structural maturation. This organized architecture improves the reliability of downstream functional assays, supports long-term culture stability, and enables the acquisition of higher-quality data for drug screening, safety evaluation, and regenerative-medicine research.



Planar cell-culture substrate



CellArray-Heart™

Gentle Detachment of Aligned Cell Sheets

The CellArray-Heart™ 35 mm Dish treated with UpCell® enables temperature-responsive, enzyme-free detachment of intact and uniformly aligned cell sheets. Because both cellular orientation and extracellular matrix integrity are preserved during harvesting, this platform provides an excellent solution for tissue-engineering workflows, regenerative-medicine studies, and advanced cell-sheet handling.

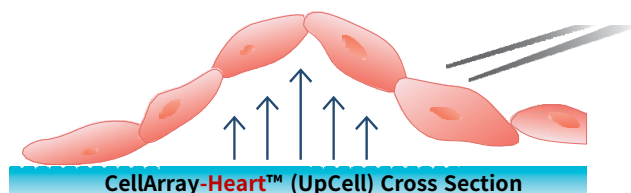
The maintained ECM supports higher cell viability and enhances engraftment potential, making these aligned sheets particularly suitable for layered tissue constructs and transplantation research.

CellArray-Heart™
35mm Dish treated with UpCell®

Developed in collaboration with CellSeed Inc.



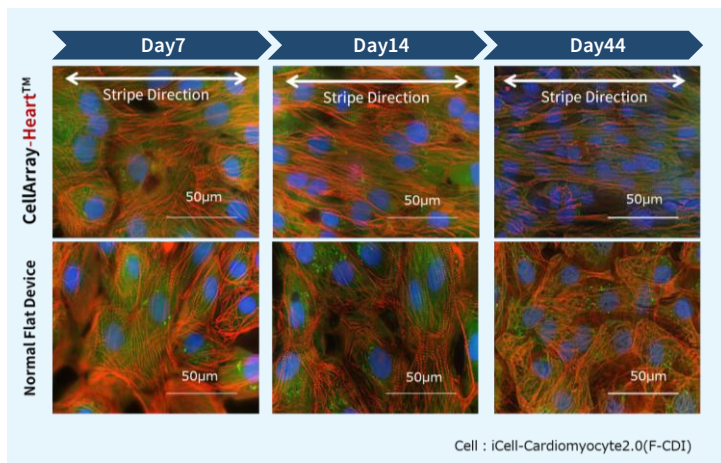
Detachable and Collectable as a cell sheet



Long-Term Unidirectional Alignment and Functional Maturation of Human iPSC-Derived Cardiomyocytes

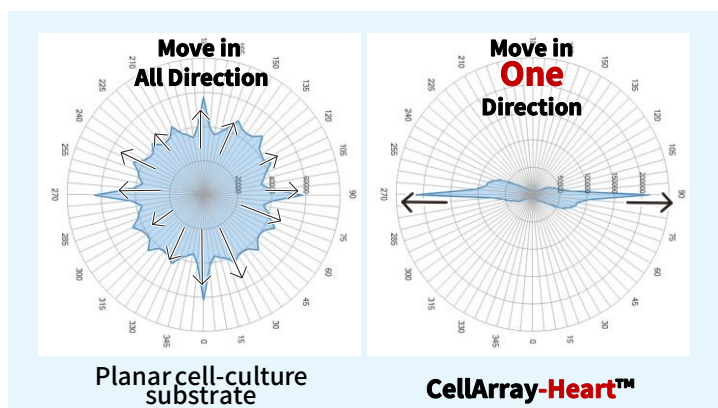
Stable Unidirectional Alignment

Human iPSC-derived cardiomyocytes cultured on CellArray-Heart™ establish clear unidirectional alignment by day 7, and this orientation remains stable for a prolonged period of at least 44 days.



Unidirectional Contraction

Motion vector analysis of human iPSC-derived cardiomyocytes grown on CellArray-Heart reveals a strong unidirectional contraction toward the 0° and 180° axes. This directional beating behavior reflects the functional consequences of their aligned morphology.



Example of a culture experiment measured using the Motion Vector system (IMACEL SI8000) with human iPSC-derived cardiomyocytes.

Key Features

- **Oriented Cultivation:** Achieves controlled cell orientation simply by seeding.
- **Stripe-Patterned Surface:** Aligns human iPSC-derived cardiomyocytes — and many other cell types — along the microstructured stripes.
- **UpCell® Surface Treatment:** Enables gentle, enzyme-free detachment and collection of intact, aligned cell sheets.
- **Proven Versatility:** Skeletal muscle cells and fibroblasts also exhibit robust alignment on this substrate.

Product Information

Just Seed. Cells Align. **CellArray-Heart™**

Model No.	Product	Number of items
HT-35D-ST-03/10/20	CellArray-Heart™ 35mm Dish treated with UpCell	3pcs./10pcs./20pcs.
HT-35D-UC-03/05	CellArray-Heart™ 35mm Dish treated with UpCell	3pcs./5pcs.
HT-96P-CP-02/10/20	CellArray-Heart™ 96 Well Plate	2pcs./10pcs./20pcs.

Sterilized equipment

Important Note

- Orientation has been confirmed in cardiomyocytes, myoblasts, and fibroblasts; however, alignment may vary depending on cell type and culture conditions.
- This product is intended for research and development use only. Its safety and performance are not guaranteed for any other purpose.
- Optical interference coloring (rainbow patterns) may appear on the culture surface due to the nanostructure. This structural coloration does not affect cell culture or microscopic observation. Under the microscope, the substrate's stripe pattern can be clearly observed.
- The data presented are provided as examples and do not guarantee the results of your experiments.

