

Launch of "CellArray™"— A Nanostructured Cell Culture Substrate

Oji Holdings (President: Hiroyuki Isono; Head Office: Chuo-ku, Tokyo) is pleased to announce that the sales of "CellArray"—a nanostructured cell culture substrate for used in regenerative medicine and drug discovery (Figure 1)—will begin on October 12.



Figure 1 Newly launched "CellArray"

Scientists are using "human induced pluripotent stem (iPS) cells" to conduct research for regenerative medicine and drug discovery. Human iPS cell-derived cardiomyocytes, however, are immature compared to their counterparts in the body. Thus, it is necessary to bring them closer to the cells in the body (early maturation).

We focused on the fact that cardiomyocytes are "aligned" in the body (Figure 2), and developed a culture substrate that directs cells to align, with the application of the "Nanodot Array" technology, which allows the fabrication of nano-size structures with a concave-convex topography. iPS cardiomyocytes cultured on this substrate were seen to align and to beat (repeated contractions and relaxations) in the same direction just as in the body (Figure 3).

Moreover, an analysis of gene expressions in the cultured aligned iPS cardiomyocytes has confirmed that they mature earlier than non-aligned iPS cardiomyocytes. We are also conducting a joint research with Juntendo University and other institutions on the application of CellArray for regenerative medicine and drug discovery.

"CellArray" will also be introduced at our exhibition booth at Regenerative Medicine JAPAN 2022 to be held at PACIFICO Yokohama from October 12 to 14.

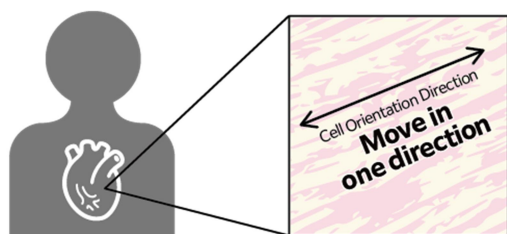


Figure 2 Cardiomyocytes in the body

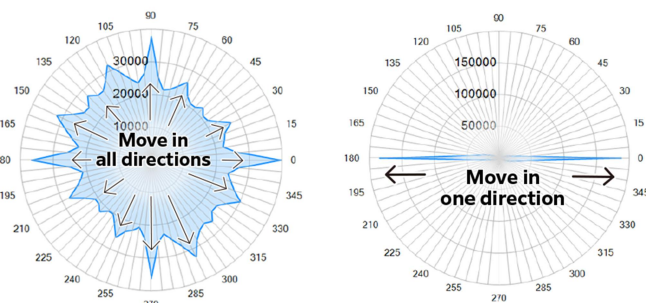


Figure 3 Experimental example using CellArray: iPS cardiomyocytes Motion Vector (Sony SI8000) Joint research with Juntendo University

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