

About CellFiber®

CellFiber® is a Tokyo-based startup established in 2015, rooted in proprietary technology developed at the Institute of Industrial Science of the University of Tokyo. Our mission is to make this innovative technology accessible beyond academic circles, driving its widespread adoption of the transformative potential of 3D cell culture to revolutionise the way therapeutic cells are produced.

In 2020, significant strides were made by applying our technology in cultures of a diverse cell types. Building upon these accomplishments, in 2023, we directed our effort towards developing products and processes that comply with industrial standards and regulatory guidelines, ensuring our commitment to excellence and innovation to improve patient outcomes and medical advancements remains unwavering.

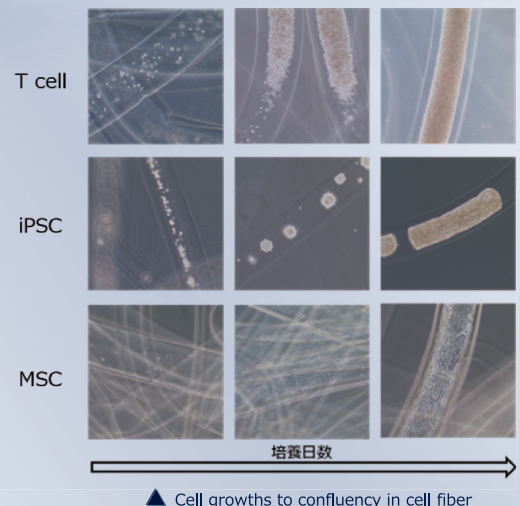
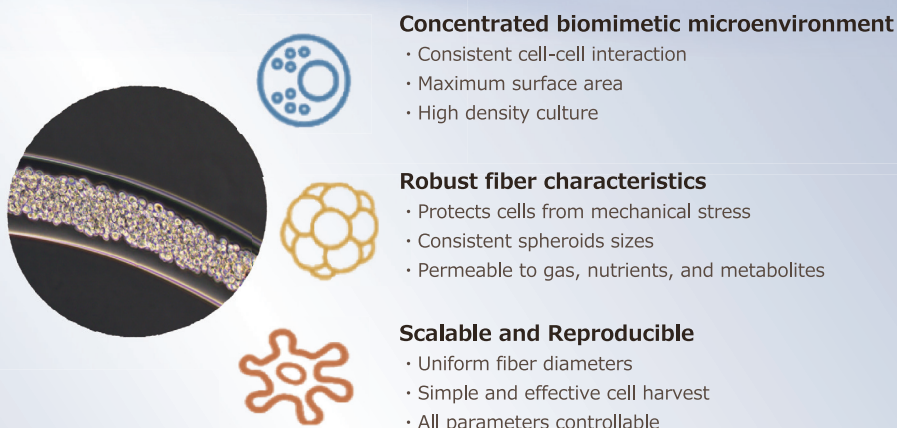
CellFiber® technology

CellFiber® is an encapsulation technology that protects the cells in tubular structure with medical grade alginate providing a secure biomimetic environment for high-density cell culture.

Alginate is a naturally-occurring, safe and biocompatible marine biopolymer extracted from brown seaweed. Its unique property of forming 3D hydrogel matrixes is particularly useful in applications involving fragile material like cells with low tolerance for higher temperature. Its safe toxicology profile make them a polymer of choice for many clinical applications such as advanced drug delivery, tissue reconstruction, implants, and wound management.

The Fiber is fabricated through the continuous laminar flows of three components: a crosslinker, alginate solution and core solution. The process results in a supportive microenvironment that minimizes physiological variability, leading to cells that frequently demonstrate improved functionality, enhanced survival rates over extended periods, and higher overall cell viability compared to those in 2D cultures. The maximized surface area not only facilitates the maximum cell capacity within a given bioreactor size but also contributes to reducing the footprint of the culture system, cutting media and operational costs.

The streamlined CellFiber® 3D culture process significantly reduces production cost. We have reimagined cell culture for treating the masses with more affordable, more accessible therapies.



Workflow with CellFiber® technology

