Special Lecture

Sat. Jul 11, 2026 1:30 PM - 2:20 PM JST | Sat. Jul 11, 2026 4:30 AM - 5:20 AM UTC | Room1（Conference Hall A）

[SL2] Special Lecture 2（III-SL2）
20 Years of iPSCs, Past, Present, and Future

Chair:Deepak Srivastava(Gladstone Institutes and University of California, San Francisco)
Chair:Hiroyuki Yamagishi(Tokyo Metropolitan Children's Medical Center)

[III-SL2-1] 20 Years of iPSCs, Past, Present, and Future

○Shinya Yamanaka (Director Emeritus and Professor, Center for iPS Cell Research and Application (CiRA), Kyoto University, President, CiRA Foundation)

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Keywords：Induced pluripotent stem cells (iPSCs)、Regenerative medicine、Drug discovery

Induced pluripotent stem cells (iPSCs) possess the remarkable ability to proliferate almost indefinitely and differentiate into multiple lineages, thus enabling a wide array of medical applications. The discovery of iPSCs has ushered in a new era of cell therapy.

We provide clinical-grade iPSC stock both domestically and internationally. Currently, clinical trials utilizing this stock are underway for more than 10 diseases in Japan, and a clinical trial for Parkinson's disease is also in progress in the United States. Marking the 20th anniversary of the announcement of mouse iPS cells, we are highly gratified that the Ministry of Health, Labour and Welfare has granted conditional, time-limited approval for the manufacturing and marketing of two iPSC-derived regenerative medical products. One of them is a cell therapy for Parkinson's disease, which represents a monumental step forward toward real-world implementation of iPSC technology.

Moreover, the development of disease models using patient-specific iPSCs has created an entirely new drug discovery process, particularly in the realm of intractable diseases. Furthermore, iPSC technology is significantly increasing the feasibility of personalized medicine, allowing us to treat patients in ways never before possible and promising to be a pivotal cornerstone of future medical practices.

In my presentation, I would like to showcase recent progress and prospects of medical applications using iPSCs, as well as the challenges we currently face and the initiatives we are undertaking to realize this vision.