

SHINYA YAMANAKA, MD, PhD

Senior Investigator



Dr. Shinya Yamanaka is a Senior Investigator and the L.K. Whittier Foundation Investigator in Stem Cell Biology at the Gladstone Institutes. At Gladstone, he conducts research at the Roddenberry Stem Cell Center. Dr. Yamanaka is also a Professor of Anatomy at the University of California, San Francisco, as well as the Director of the Center for iPS Cell Research and Application (CiRA) and a Principal Investigator at the Institute for Integrated Cell-Material Sciences, both at Kyoto University.

In 2012, Dr. Yamanaka was awarded the Nobel Prize in Physiology or Medicine for his discovery that adult somatic cells can be reprogrammed into pluripotent cells. By introducing the genes for four factors that turn genes on and off, he induced the skin cells of adult mice to become like embryonic stem cells, which he called induced pluripotent stem (iPS) cells. This iPS cell technology represents an entirely new platform for fundamental studies of developmental biology. Rather than using disease models made in yeast, flies, mice or other animals, iPS cells can be taken from patients with a specific disease. As a result, they contain a complete set of the genes that resulted in that disease—representing the potential of an almost perfect disease model for studying disease development, new drugs and treatments.

Dr. Yamanaka's current research focuses on ways to generate cells resembling embryonic stem cells by reprogramming somatic, or skin, cells. He seeks to understand the molecular mechanisms that underlie pluripotency and the rapid proliferation of embryonic stem cells—they can become any type of cell in the body—and to identify the factors that induce reprogramming.

In 1996, Dr. Yamanaka became an Assistant Professor at Osaka City University Medical School. In 1999, he was appointed Associate Professor at Nara Institute of Science and Technology, where he became a full professor in 2003. He took his current position as a professor at Kyoto University in 2004 and was appointed as a Senior Investigator at the Gladstone Institutes in 2007. Since 2008, he has directed CiRA.

In addition to the Nobel Prize, Dr. Yamanaka has received many awards and honors, including the Albert Lasker Basic Medical Research Award, the Wolf Prize in Medicine, the Millennium Technology Award, the Shaw Prize, the Kyoto Prize for Advanced Technology, the Gairdner International Award, the Robert Koch Award and the March of Dimes Prize.

Dr. Yamanaka earned an MD from Kobe University in 1987 and a PhD from Osaka City University in 1993. From 1987 to 1989, he was a resident at the National Osaka Hospital. From 1993 to 1996, he was a postdoctoral fellow at Gladstone.

Kyoto Exhibit 2006
BioGatekeeper v. Kyoto University
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