

## CAI Cells and Products Supported Nobel Prize-Winning Stem Cell Research

Dr. Shinya Yamanaka, of the Frontier Medical Sciences at Kyoto University and the J. David Gladstone Institutes at UCSF, was awarded the 2012 Nobel Prize in Physiology or Medicine for the discovery that mature cells can be reprogrammed to become pluripotent. His original paper was published in 2007 and was hailed as Time magazine's *medical breakthrough* of that year. We are proud to be the primary cell provider for Dr. Yamanaka.

The publications, issued patents and patent applications below cite the use of Cell Applications, Inc. products. During their work on induced pluripotent stem cells, Dr. Yamanaka, his lab and co-authors used *Dermal Fibroblasts* (HDF), *Synoviocytes* (HFLS) and *Tissue RNA* from CAI.

### 2007

Takahashi, K., K. Tanabe, M. Ohnuki, M. Narita, T. Ichisaka, K. Tomoda, and S. Yamanaka. 2007. Induction of pluripotent stem cells from adult human fibroblasts by defined factors. *Cell*. 131:861-872.

### 2008

Nakagawa, M., M. Koyanagi, K. Tanabe, K. Takahashi, T. Ichisaka, T. Aoi, K. Okita, Y. Mochiduki, N. Takizawa, and S. Yamanaka. 2008. Generation of induced pluripotent stem cells without Myc from mouse and human fibroblasts. *Nat Biotech*. 26:101-106.

Yamanaka, M., Y. Anada, Y. Igarashi, and A. Kihara. 2008. A splicing isoform of LPP1, LPP1a, exhibits high phosphatase activity toward FTY720 phosphate. *Biochemical and biophysical research communications*. 375:675-679.

Yamanaka, S., K. Takahashi, and M. Nakagawa. 2008. Nuclear reprogramming factor and induced pluripotent stem cells. Patent Application US 20090047263 A1.

### 2009

Ohnuki, M., K. Takahashi, and S. Yamanaka. 2009. Generation and characterization of human induced pluripotent stem cells. *Current Protocols in Stem Cell Biology*, 1Jun, DOI: 10.1002/9780470151808.sc04a02s9.

Takahashi, K., M. Narita, M. Yokura, T. Ichisaka, and S. Yamanaka. 2009. Human induced pluripotent stem cells on autologous feeders. *PLoS one*. 4:e8067.

Tsubooka, N., T. Ichisaka, K. Okita, K. Takahashi, M. Nakagawa, and S. Yamanaka. 2009. Roles of Sall4 in the generation of pluripotent stem cells from blastocysts and fibroblasts. *Genes to Cells*. 14:683-694.

Yamanaka, S., and K. Okita. 2009. Method of nuclear reprogramming. Patent Application US 20100279404 A1.

### 2010

Takayama, N., S. Nishimura, S. Nakamura, T. Shimizu, R. Ohnishi, H. Endo, T. Yamaguchi, M. Otsu, K. Nishimura, M. Nakanishi, A. Sawaguchi, R. Nagai, K. Takahashi, S. Yamanaka, H. Nakauchi, and K. Eto. 2010. Transient activation of c-MYC expression is critical for efficient platelet generation from human induced pluripotent stem cells. *J Exp Med*, 207:2817-2830.

Yamanaka, S. 2010. Nuclear reprogramming factor and induced pluripotent stem cells. Patent Application US 20100216236 A1.

### 2011

Iwabuchi, K., T. Yamakawa, Y. Sato, T. Ichisaka, K. Takahashi, K. Okita, and S. Yamanaka. 2011. ECAT11/L1td1 Is Enriched in ESCs and Rapidly Activated During iPSC Generation, but It

Is Dispensable for the Maintenance and Induction of Pluripotency. PLOS One, DOI: 10.1371/journal.pone.0020461.

Ohta, S., Y. Imaizumi, Y. Okada, W. Akamatsu, R. Kuwahara, M. Ohyama, M. Amagai, Y. Matsuzaki, S. Yamanaka, and H. Okano. 2011. Generation of human melanocytes from induced pluripotent stem cells. PloS one. 6:e16182.

Yamanaka, S., and K. Takahashi. 2011. Oct3/4, Klf4, c-Myc and Sox2 produce induced pluripotent stem cells. Patent US 8058065 B2.

Yamanaka, S., K. Takahashi, and K. Tanabe. 2011. Efficient method for establishing induced pluripotent stem cells. Patent US 20130267030 A1.

## 2012

Yamanaka, S., K. Takahashi, and K. Okita. 2012. Induced pluripotent stem cells produced with Oct3/4, Klf4 and Sox2. Patent US 8278104 B2.

Yamanaka, S., K. Takahashi, and K. Okita. 2012. Somatic cell reprogramming by retroviral vectors encoding Oct3/4, Klf4, c-Myc and Sox2. Patent US 8129187 B2.

## 2013

Koyanagi-Aoi, M., M. Ohnuki, K. Takahashi, K. Okita, H. Noma, Y. Sawamura, I. Teramoto, M. Narita, Y. Sato, T. Ichisaka, N. Amano, A. Watanabe, A. Morizane, Y. Yamada, T. Sato, J. Takahashi, and S. Yamanaka. 2013. Differentiation-defective phenotypes revealed by large-scale analyses of human pluripotent stem cells. Proceedings of the National Academy of Sciences. 110:20569-20574.

Okita, K., T. Yamakawa, Y. Matsumura, Y. Sato, N. Amano, A. Watanabe, N. Goshima, and S. Yamanaka. 2013. An Efficient Nonviral Method to Generate Integration-Free Human-Induced Pluripotent Stem Cells from Cord Blood and Peripheral Blood Cells. Stem cells. 31:458-466.

## 2015

Yamanaka, S. and K. Okita. 2015. Method of Nuclear Reprogramming. US Patent Application 20150072417 A1.

Yamanaka, S. and O. Keisuke. 2015. HIGHLY EFFICIENT METHOD FOR ESTABLISHING INDUCED PLURIPOTENT STEM CELL. US Patent Application 20150175973 A1.

## 2016

Yamanaka, S., K. Takahashi, K. Tanabe and M. Ohnuki. 2016. Method of Efficiently Establishing Induced Pluripotent Stem Cells. Patent Application US 2016 0122720 A1.