India Contact:
Life Technologies (India) Pvt. Ltd.
Mobile: +91-9810521400, Ph: +91-11-42208000
Email: customerservice@lifetechindia.com
Web: www.lifetechindia.com

Human iPS Cell Line (Normal)

Catalog Number	30HU-002	**Cell Number**	~0.5-1.0 million cells/vial
Species	*Homo sapiens*	**Storage Temperature**	Liquid nitrogen

Product Description

Induced Pluripotent Stem Cells (iPSCs) are a type of stem cells reprogrammed from a multitude of somatic cells into an embryonic like pluripotent state. They have large self-renewal capability and can differentiate into any cell type from all three germ layers [1, 2]. Due to their high differentiation potential, iPSCs emerge as a promising cell model to promote cell differentiation for the regeneration studies. Importantly, iPSCs reprogrammed from rare disease carriers can be subsequently expanded and differentiated indefinitely, allowing for genetically pertinent disease-specific iPSC model for research [3]. iPS cells, thus, are a unique model for studying a variety of processes that occur in the early development of mammals and are a promising tool in cell therapy of human diseases [4].

iXCells Biotechnologies is proud to offer human iPSCs derived from normal and patient somatic cells (dermal fibroblasts, adipose-derived stem cells, peripheral blood mononuclear cells) with different race, gender, and age options to choose from. The pertinent donor information is available on the CoA or upon request (info@ixcellsbiotech.com).

These iPSCs are established from a single clone and expanded in feeder-free conditions. iXCell's iPSCs demonstrate hESC morphology, express pluripotency markers, have normal karyotype, and are integration free. They are negative for mycoplasma, bacteria, yeast, fungi, HIV-1, HBV and HCV.

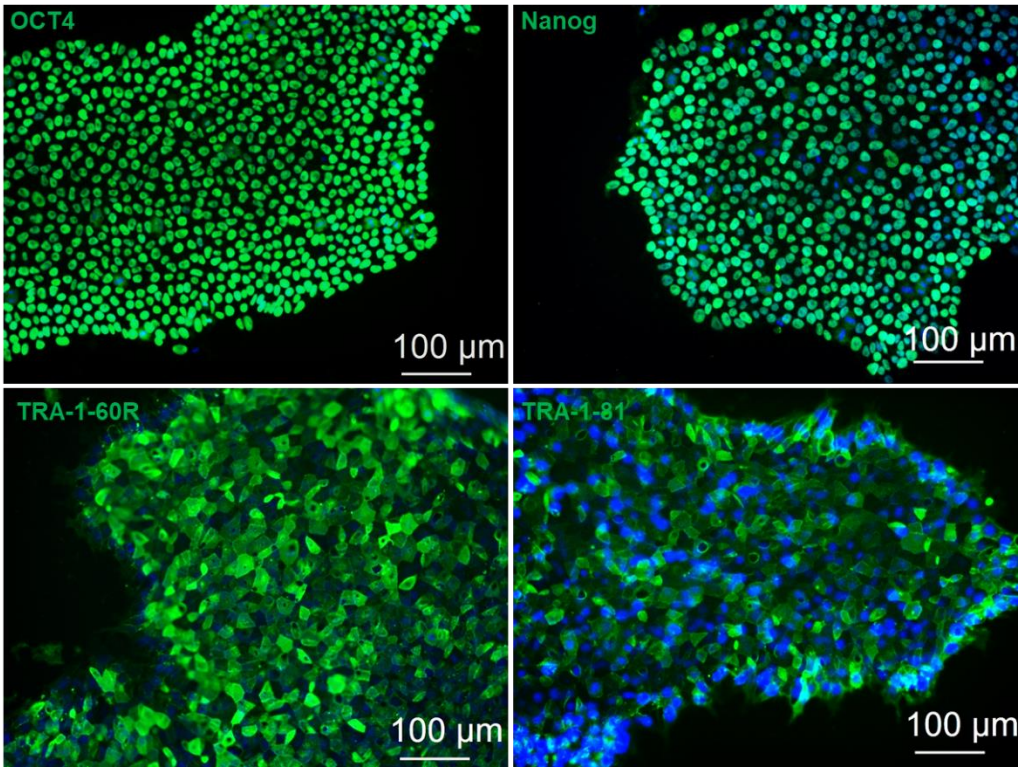

Figure 1. iXCells human iPS cells are characterized by immunostaining with Oct4, Nanog, TRA-1-60-R, TRA-1-81(Green).

In addition, patient-derived iPS cell lines are also available as separate product. The currently available disease specific iPS cell lines are derived from patients with Type 2 Diabetes (T2D), Alzheimer's Disease (AD), Parkinson's Disease (PD), Amyotrophic Lateral Sclerosis (ALS). More disease-specific iPS lines are under development. We also provide custom iPSC generation and iPSC differentiation services to meet your needs.

Product Details

Tissue Origin	Human iPS Cells derived from dermal fibroblasts, adipose-derived stem cells, or peripheral blood mononuclear cells
Package Size	~0.5-1.0 million cells/vial
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media & Reagents	Human iPSC Feeder-Free Growth Medium (Cat # MD-0019) Human iPSC Xeno-Free Growth Medium (Cat # MD-0074)

Protocols

Thawing of Frozen Cells

1. Upon receipt of the frozen cells, it is recommended to thaw the cells and initiate the culture immediately in order to retain the highest cell viability.
2. Before recovering cells, prepare evenly coated Matrigel® / Cultrex® BME plates, following manufacturer's instructions.
3. To thaw the cells, put the vial in 37°C water bath with gentle agitation for ~1-2 minutes. Keep the cap out of water to minimize the risk of contamination.
4. Pipette the cells into a 15 mL conical tube with 5 mL fresh culture media. **Human iPSC Feeder-Free Growth Medium** (Cat # MD-0019) or **Human iPSC Xeno-Free Growth Medium** (Cat # MD-0074) can be used in feeder-free culture system.
5. Centrifuge at 50-100*g* for 5 minutes at room temperature.
6. Remove the supernatant and re-suspend the cells gently in culture medium supplemented with 10 µM Y27632 (Cat # MD-0025).

Note: *Gently resuspend the cells to avoid formation of single cells.*

7. Seed the cells on Matrigel®/Cultrex® precoated plates for feeder-free culture.

Note*: It is recommended to seed one vial of cells onto one 6-well plate.*

8. Incubate in 37°C CO_2 incubator overnight.
9. The next day, change media without Y27632.

10. Change media daily until cells are ready to be passaged. It may take 1-2 weeks (depending on the lot) to fully recover the cells before passaging.

***Note**: There may be 5-20% differentiated cells after thaw. We recommend removing differentiated cells with a sterile tip or syringe at this point. The cells will be stabilized after 2-3 passages.*

Safety Precaution: *it is highly recommended that protective gloves and clothing should be used when handling frozen vials.*

Sub-Culturing Procedure for a 6-well Plate

1. Prepare evenly coated Matrigel®/Cultrex® plates according to manufacturers' instructions.
2. When the cells are 80-90% confluent, aspirate the medium and wash cells with 2 mL of sterile PBS/well.
3. Add 1 mL/well of ReLeSR™ and leave for 1-2 minutes at room temperature. Aspirate the ReLeSR and incubate the plate at 37°C for another 3-4 minutes.

***Note**: Dissociation time may vary depending on the cell line used.*

4. Add 1 mL of medium and detach the colonies by gently tapping the plate or rocking side to side.
5. Transfer the detached cell aggregates to a 15 mL tube containing 5 mL fresh culture media.
6. Centrifuge at 50-100*g* for 5 minutes at room temperature and resuspend the pellet in desired volume. Avoid formation of single cells by gently resuspending the cell pellet.
7. Plate the cell aggregate mixture at the appropriate density onto pre-coated wells in recommended iXCells medium with 10 µM Y27632. The next day, change media without Y27632.
8. If the colonies are at an optimal density, cells will be confluent and ready to use in 4 - 7 days.

References

[1] Medvedev, S. P., Shevchenko, A. I., & Zakian, S. M. (2010). Induced Pluripotent Stem Cells: Problems and Advantages when Applying them in Regenerative Medicine. Acta naturae, 2(2), 18–28.

[2] Ghaedi, M., & Niklason, L. E. (2019). Human Pluripotent Stem Cells (iPSC) Generation, Culture, and Differentiation to Lung Progenitor Cells. Methods in molecular biology (Clifton, N.J.), 1576, 55–92.

[3] Okita, K., Matsumura, Y., Sato, Y., Okada, A., Morizane, A., Okamoto, S., Hong, H., Nakagawa, M., Tanabe, K., Tezuka, K., Shibata, T., Kunisada, T., Takahashi, M., Takahashi, J., Saji, H., & Yamanaka, S. (2011). A more efficient method to generate integration-free human iPS cells. Nature methods, 8(5), 409–412

[4] Ebert, A. D., Liang, P., & Wu, J. C. (2012). Induced pluripotent stem cells as a disease modeling and drug screening platform. Journal of cardiovascular pharmacology, 60(4), 408–416.

Disclaimers