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# **Product Information**

#### **Human Dermal Fibroblasts**

Catalog Number	10HU-013 (Neonatal) 10HU-014 (Adult) 10HU-219 (Type I Diabetes)	Cell Number	0.5 million cells/vial 1.0 million cells/vial
Species	Homo sapiens	Storage Temperature	Liquid Nitrogen

# **Description**

Human Dermal Fibroblasts (HDF) are the most prevalent cell in human dermis, and one of the most important architects of cutaneous would healing [1]. The fibroblast is a malleable cell, capable of altering its function and physiology or even transforming into a new cell type, based on its location within the body. The dermal fibroblast also has the unique title of being the first human somatic cell to be induced into a pluripotent stem cell line [2,3].

**iXCells Biotechnologies** provides high quality Human Dermal Fibroblasts (HDF) from normal donors including neonatal foreskin (Cat# 10HU-013) and adult skin (Cat# 10HU-014), or from adult skin of Type 1 Diabetes patients. These cells are derived from the dermis of normal human neonatal foreskin or adult skin and cryopreserved at the end of primary culture. HDF are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi. They can further expand in **Fibroblast Growth Medium** (Cat# MD-0011) for no more than 3 passages under the condition suggested by iXCells Biologies. Further expansion may decrease the proliferation rate and purity.

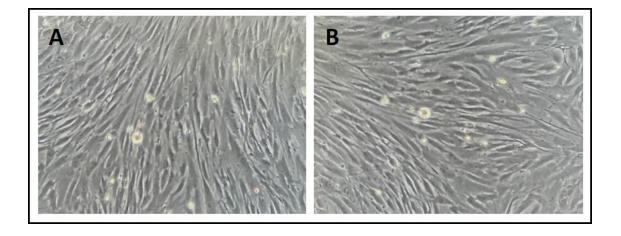


Figure 1. (A) Human Neonatal Dermal Fibroblasts (10HU-013). (B) Human Adult Dermal Fibroblasts (10HU-014).

### **Product Details**

Tissue	Human Dermal Fibroblasts, Normal (Neonatal foreskin, adult skin)
Package Size	0.5 million cells/vial, 1.0 million cells/vial
Shipped	Cryopreserved
Storage	Liquid nitrogen
<b>Growth Properties</b>	Adherent
Media	Fibroblast Growth Medium (Cat# MD-0011)

### **Protocols**

### **Thawing of Frozen Cells**

- 1. Upon receipt of the frozen Human Dermal Fibroblasts (HDF), it is recommended to thaw the cells and initiate the culture immediately in order to retain the highest cell viability.
- 2. 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.
- Pipette the cells into a 15 mL conical tube with 5mL fresh Fibroblast Growth Medium (Cat# MD-0011).
- 4. Centrifuge at 1,000 rpm (~220 g) for 5 minutes under room temperature.
- 5. Remove the supernatant and resuspend the cells in Fibroblast Growth Medium.
- 6. Culture the cell in a T75 flask. Change the medium every other day until cells reach 80-90% confluence.

Safety Precaution: it is highly recommended that protective gloves and clothing should be used when handling human cells.

#### **Standard Culture Procedure**

- 1. HDFs can be cultured in Fibroblast Growth Medium (Cat# MD-0011).
- 2. When cells reach ~80-90% confluence, remove the medium, and wash once with sterile PBS (5 mL/T75 flask).
- 3. Add 3 mL of 0.25% Trypsin-EDTA to the flask and incubate for 3-5 minutes at 37°C. Neutralize the Trypsin by adding 2-3 volumes of cell culture medium.
- 4. Centrifuge 1,000 rpm (~220 g) for 5 minutes and resuspend the cells in desired volume of medium.
- 5. Seed the cells onto the new culture vessels at 5 x 10<sup>3</sup> cells/cm<sup>2</sup>. Change the medium every other day until cells reach 80-90% confluence.

## References

- [1] Lauren E. Tracy, Raquel A. Minasian, and E.J. Caterson (2016) Extracellular Matrix and Dermal Fibroblast Function in the Healing Wound. Adv Wound Care (New Rochelle). 2016 Mar 1; 5(3): 119–136.
- [2] Takahashi K, Yamanaka S. (2006) Induction of pluripotent stem cells from mouse embryonic and adult fibroblast cultures by defined factors. Cell; 126:663–676.
- [3] Kazutoshi Takahashi 1, Koji Tanabe, Mari Ohnuki, Megumi Narita, Tomoko Ichisaka, Kiichiro Tomoda, Shinya Yamanaka. (2007) Induction of pluripotent stem cells from adult human fibroblasts by defined factors. Cell; 131:861–872.

#### **Disclaimers**

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