

## Product Information

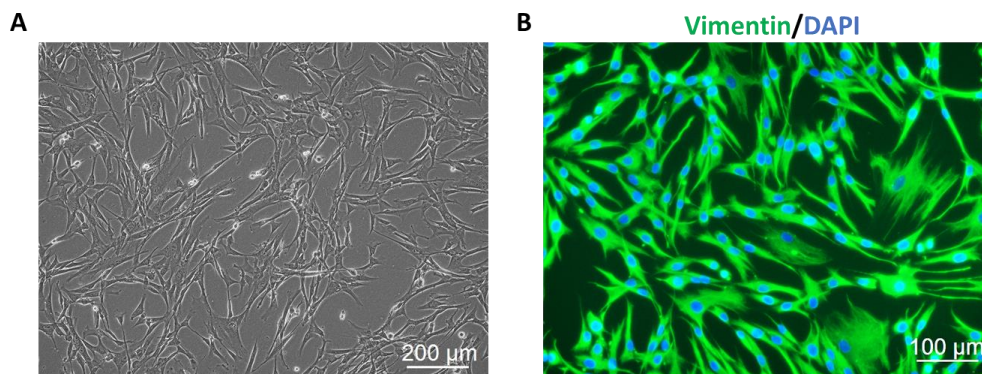
### Human Pulmonary Fibroblasts (HPF)

Catalog Number	10HU-145	Cell Number	0.5 million cells/vial
Species	<i>Homo sapiens</i>	Storage Temperature	Liquid Nitrogen

### Description

The most abundant cell type in lung interstitial is fibroblasts. They resemble ordinary fibroblasts but have some distinguishing features, such as long branching processes and gap junctions. The main function of Human Pulmonary Fibroblasts (HPF) is to produce type III collagen, elastin, and proteoglycans of the extracellular matrix of the alveolar septa. HPF play an important role in the repair and remodeling processes following injury. The controlled accumulation of fibroblasts to sites of inflammation is crucial to effective tissue repair after injury <sup>[1]</sup>. Either inadequate or excessive accumulation of fibroblasts could result in abnormal tissue function. For example, the excess proliferation of fibroblasts contributes to the adventitial thickening observed during the development of hypoxia-induced pulmonary hypertension <sup>[2]</sup>.

**iXCells Biotechnologies** provides high quality Human Pulmonary Fibroblasts (HPF), which are isolated from human lung tissue and cryopreserved at P1, with >0.5 million cells in each vial. HPF express fibronectin and 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 Biotechnologies. Further expansion may decrease the proliferation rate and purity.



**Figure 1.** Human Pulmonary Fibroblasts (HPF). (A) Phase contrast image of HPF. (B) Immunofluorescence staining with antibody against Vimentin.

## Product Details

<b>Tissue</b>	Human lung tissue
<b>Package Size</b>	0.5 million cells/vial
<b>Passage Number</b>	P1
<b>Shipped</b>	Cryopreserved
<b>Storage</b>	Liquid nitrogen
<b>Growth Properties</b>	Adherent
<b>Media</b>	Fibroblast Growth Medium (Cat# MD-0011)

## Protocols

### Thawing of Frozen Cells

1. Upon receipt of the frozen Human Pulmonary Fibroblasts (HPF), 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.
3. Pipette the cells into a 15 mL conical tube with 5 mL 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 medium every other day till 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. HPFs 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  $5 \times 10^3$  cells/cm<sup>2</sup>. Change the medium every other day until cells reach 80-90% confluence.

## References

- [1] Kuwano K, Hagimoto N, Hara N. (2001) Molecular mechanisms of pulmonary fibrosis and current treatment. *Curr Mol Med* 1(5):551-73.
- [2] Das M, Dempsey EC, Reeves JT, Stenmark KR. (2002) Selective expansion of fibroblast subpopulations from pulmonary artery adventitia in response to hypoxia. *Am J Physiol Lung Cell Mol Physiol* 282(5):L976-86.

## Disclaimers

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