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# Product Information

**Human Bronchial Fibroblasts (HBF)**

| | | | |
|---|---|---|---|
| Catalog Number | 10HU-123 | Cell Number | 0.5 x $10^6$ cells/vial |
| Species | *Homo sapiens* | Storage Temperature | Liquid Nitrogen |

## Description

The most abundant cell type in the bronchus is fibroblasts. Human Bronchial Fibroblasts (HBF) display a mesenchymal stem cell phenotype and their principle function is to produce type III collagen, elastin, and proteoglycans of the extracellular matrix [1]. Bronchial fibroblasts play an important role in the repair and remodeling processes following injury. The controlled accumulation of fibroblasts to sites of inflammation is crucial for effective tissue repair after injury [2]. Either inadequate or excessive accumulation of fibroblasts can result in abnormal tissue function. For example, the excess fibroblast proliferation and collagen secretion that occurs from bronchial subepithelial fibrosis can result in airway obstruction and bronchial hyper-responsiveness [3].

iXCells Biotechnologies provides high quality HBF, which are isolated from human bronchus tissue and cryopreserved at P1, with >0.5 million cells in each vial. HBF express fibronectin and are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi. They can further expand for 15 population doublings in Fibroblast Growth Medium (Cat# MD-0011) under the condition suggested by iXCells Biotechnologies.

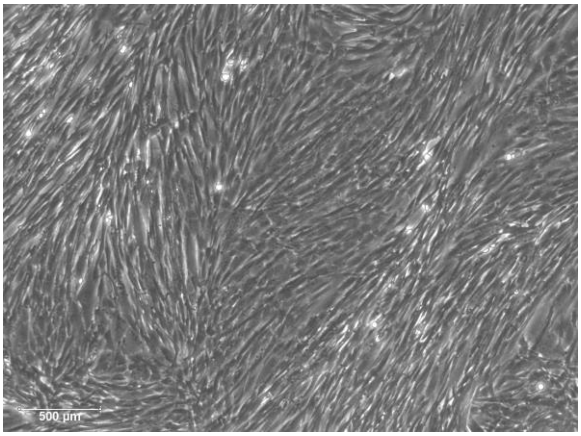


**Figure 1.** Phase contrast of Human Bronchial Fibroblasts (HBF)

## Product Details

| | |
|---|---|
| **Tissue** | Human bronchus tissue |
| **Package Size** | 0.5 x $10^6$ cells/vial |
| **Passage Number** | P1 |
| **Shipped** | Cryopreserved |
| **Storage** | Liquid nitrogen |
| **Growth Properties** | Adherent |
| **Media** | Fibroblast Growth Medium (Cat# MD-0011) |

## Protocols

### Thawing of Frozen Cells

1. Upon receipt of the frozen Human Bronchial Fibroblasts (HBF), it is recommended to thaw the cells and initiate the culture immediately in order to retain the highest cell viability.
2. (Optional) Gelatin-coated culture vessels are recommended for culturing HBF. Coat sterile culture vessels with 0.1% gelatin for 20 minutes at room temperature, and then aspirate the excess gelatin solution before seeding cells.
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 5ml fresh Fibroblast Growth Medium (Cat# MD-0011).
5. Centrifuge at 1,000 rpm (~220 g) for 5 minutes under room temperature.
6. Remove the supernatant and resuspend the cells in Fibroblast Growth Medium.
7. Culture the cell in a T75 flask. Change medium every other day.

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

### Standard Culture Procedure

1. HBFs can be cultured in Fibroblast Growth Medium (Cat# MD-0011). Change medium every other day.
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 gelatin-coated culture vessels at 5 × $10^3$ cells/$cm^2$. Change medium every other day.

# References

[1] Sabatini, F., Petecchia, L., Tavian, M., Jodon de Villeroche, V., Rossi, GA,. Brouty-Boye, D. (2005) Human bronchial fibroblasts exhibit a mesenchymal stem cell phenotype and multilineage differentiating potentialities. Lab Invest 85(8):962-71.

[2] Kuwano K, Hagimoto N, Hara N. (2001) Molecular mechanisms of pulmonary fibrosis and current treatment. Curr Mol Med 1(5):551-73.

[3] Hoshino, M., Nakamura, Y., Sim, J., Isoqai, S. (1998) Bronchial subepithelial fibrosis and expression of matrix metalloproteinase-9 in asthmatic airway inflamaiton. J Allergy Clin Immunol 102(5): 783-8. ScienCellResearch LaboratoriesTM.

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