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Product Information

Human Bronchial Epithelial Cells (HBEpC)

Catalog Number	10HU-093	**Cell Number**	0.5 million cells/vial
Species	*Homo sapiens*	**Storage Temperature**	Liquid Nitrogen

Description

The respiratory epithelium is composed of a mixed population of ciliated, nonciliated, and mucous-secreting cells from proximal to distal airways. The individual characteristics of these cells create not only an effective physical barrier against various noxious substances, but also a highly sophisticated host defense system by producing and releasing a large number of chemical mediators and cytokines [1]. The bronchial epithelium consists of the surface epithelial cells and mucus glands. The surface epithelial cells are made up of three principle cell types: basal, goblet, and ciliated cells, of which the latter two form a suprabasal columnar structure and are necessary for mucociliary clearance. Studies using human primary bronchial epithelial cells (HBEpC) have demonstrated that IL-4 and IL-13 stimulation can modify cellular proliferation, ciliary beating, and mucous production [2]. HBEpC proliferation is also regulated in part by EGF receptor signaling [3]. HBEpC provide an excellent model system to study all aspects of epithelial function and disease, particularly those related to airway viral infections, as well as tissue repair mechanisms, signaling changes and potential treatments relevant to lung injuries, mechanical and oxidative stress, inflammation, pulmonary diseases and smoking.

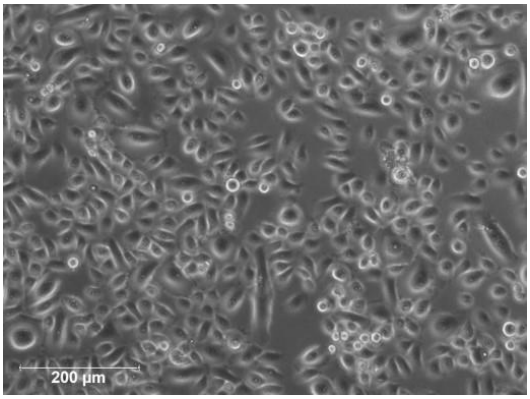

Figure 1. Human Bronchial Epithelial Cells (HBEpC) (phase contrast).

iXCells Biotechnologies provides high quality HBEpC, which are isolated from human bronchi and cryopreserved at P1, with >0.5 million cells in each vial. HBEpC express cytokeratin-18, -19, and vimentin. They are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi and can further expand for 12 population doublings in Epithelial Cell Growth Medium (Cat# MD-0041) under the condition suggested by iXCells Biotechnologies.

Product Details

Tissue	Human bronchi
Package Size	0.5 x 10^6 cells/vial
Passage Number	P1
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Epithelial Cell Growth Medium (Cat# MD-0041)

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. To thaw the cells, put the vial in 37°C water bath with gentle agitation for ~1 minute. Keep the cap out of water to minimize the risk of contamination.
3. Pipette the cells into a 15ml conical tube with 5ml fresh Epithelial Cell Growth Medium (Cat# MD-0041).
4. Centrifuge at 1000rpm (~220g) for 5 minutes under room temperature.
5. Remove the supernatant and resuspend the cells in fresh Epithelial Cell Growth Medium.
6. Culture the cell in T75 flask.

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

Standard Culture Procedure

1. HBEpCs can be cultured in Epithelial Cell Growth Medium (Cat# MD-0041).
2. When cells reach ~80-90% confluence, remove the medium, and wash once with sterile PBS (5ml/T75 flask).
3. Add ~2.5ml of 0.25% Trypsin-EDTA to the flask and incubate for ~3 minutes at 37°C. Neutralize the enzyme by adding 2-3

volumes of cell culture medium.

4. Centrifuge 1000rpm (~220g) for 5min and resuspend the cells in desired volume of medium.

5. Seed the cells in the new culture vessels at 5×10^3 cells/cm^2.

References

[1]. Velden, V. H., and H. F. Versnel. 1998. Bronchial epithelium: morphology, function and pathophysiology in asthma. Eur. Cytokine Netw. 9:585-597.
[2]. Kikuchi, T., Shively, J.D., Foley, J.S., Drazen, J.M., Tschumperlin, D.J. (2004) Differentiation-dependent responsiveness of bronchial epithelial cells to IL-4/13 stimulation. Am J Physiol Lung Cell Mol Physiol. 287:L119-26.
[3]. Kim S, Schein AJ, Nadel JA.(2005) E-cadherin promotes EGFR-mediated cell differentiation and MUC5AC mucin expression in cultured human airway epithelial cells. Am J Physiol Lung Cell Mol Physiol. 289:L1049-60.

Disclaimers