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

Product Information

Human Bronchial Smooth Muscle Cells (HBSMC)

Catalog Number	10HU-194	**Cell Number**	0.5 million cells/vial
Species	*Homo sapiens*	**Storage Temperature**	Liquid Nitrogen

Description

Airway smooth muscle is fundamental for maintaining airway tone. The specialized ultrastructural features and regulatory mechanisms of airway smooth muscle are vital for normal airway function. Patients with respiratory disorders, such as severe asthma, exhibit the distinguishing feature of increased bronchial smooth muscle mass. The increase in smooth muscle mass is related either to abnormal bronchial smooth muscle cell (BSMC) proliferation or the accumulation of contractile protein. Smooth muscle cell proliferation is an important component of airway remodeling in asthma and is consequently a target for the development of novel anti-asthma agents. Airway smooth muscle cells express CT-1 [1] and release GM-CSF, RANTES and IL-8 in vitro [2]. In order to develop therapies for asthma, researchers have utilized BSMC to elucidate the cellular and molecular mechanisms underlying BSMC proliferation.

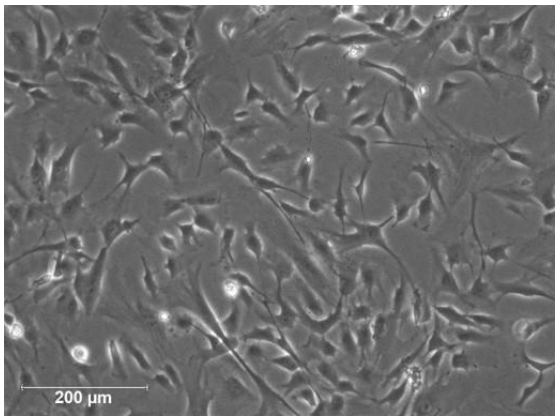

Figure 1. Human Bronchial Smooth Muscle Cells (HBSMC) (phase contrast).

iXCells Biotechnologies provides high quality Human Bronchial Smooth Muscle Cells (HBSMC), which are isolated from human bronchi and bronchioles and cryopreserved at P1, with >0.5 million cells in each vial. HBSMC express α-smooth

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muscle actin and desmin and are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fung. HBSMC can further expand for 13 population doublings in Smooth Muscle Cell Growth Medium (Cat # MD-0034) under the condition suggested by iXCells Biotechnologies.

Product Details

Tissue	Human Bronchi and bronchioles
Package Size	0.5 x 10^6 cells/vial
Passage Number	P1
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Smooth Muscle Cell Growth Medium (Cat # MD-0034)

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 Smooth Muscle Cell Growth Medium (Cat # MD-0034).
4. Centrifuge at 1000rpm (~220g) for 5 minutes under room temperature.
5. Remove the supernatant and resuspend the cells in fresh Smooth Muscle 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. HBSMCs can be cultured in Smooth Muscle Cell Growth Medium (Cat # MD-0034).
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.

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

References

[1] Zhou, D., Zheng, X., Wang, L., Stelmack, G., Halayko, A. J., Dorscheid, D. and Bai, T. R. (2003) Expression and effects of cardiotrophin-1 (CT-1) in human airway smooth muscle cells. British Journal of Pharmacology 140:1237-1244.

[2] Oltmanns, U., Issa, R., Sukkar, M. B., John, M. and Chung, K. F. (2003) Role of c-jun N-terminal kinase in the induced release of GM-CSF, RANTES and IL-8 from human airway smooth muscle cells. British Journal of Pharmacology 139:1228-1234.

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