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Product Information

Human Aortic Smooth Muscle Cells (HASMC)

Catalog Number	10HU-190	Cell Number	0.5 million cells/vial
Species	*Homo sapiens*	Storage Temperature	Liquid Nitrogen

Description

Smooth muscle cells (SMC) are primary contributors to the development of arterial disease [1]. The ability of vascular SMC to switch to a proliferative phenotype is one of the main factors in the development and progression of vascular disease. Recent studies have demonstrated that SMC express calcium channels [2], ICAM-1, and VCAM-1. The expression of ICAM-1 and VCAM-1 on SMC may contribute to the inflammatory reaction in the vascular wall and may actively be involved in the progression of vascular disease [3]. Vascular SMC in culture play an important role in vascular disease research and can be used to identify new therapeutic targets to treat arterial disease.

iXCells Biotechnologies provides high quality Human Aortic Smooth Muscle Cells (HASMC), which are isolated from human aorta and cryopreserved at P1, with >0.5 million cells in each vial. HASMC express α-smooth muscle actin and desmin and are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fung. HASMC can further expand for 10 population doublings in Smooth Muscle Cell Growth Medium (Cat # MD-0034) under the condition suggested by iXCells Biotechnologies.

Product Details

Tissue	Human aorta
Package Size	0.5 million 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 1-2 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 **Smooth Muscle Cell Growth Medium (Cat # MD-0034)**.
4. Centrifuge at 1,000 rpm (~220 g) for 5 minutes under room temperature.
5. Remove the supernatant and resuspend the cells in fresh culture medium.
6. Culture the cell in the 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 frozen vials.*

Standard Culture Procedure

1. Human aortic smooth muscle cell 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 3 mL of 0.05% Trypsin-EDTA to the flask and incubate for5 minutes at 37°C. Neutralize the enzyme 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 new culture vessels at 5×10^3 cells/cm^2. Change the medium every other day until cells reach 80-90% confluence.

References

[1] Shi ZD, Abraham G and Tarbell JM. Shear stress modulation of smooth muscle cell marker genes in 2-D and 3-D depends on mechanotransduction by heparin sulfate proteoglycans and ERD1/2. PLoS One. 2010, 5(8):e12196.

[2] Retailleau K, Duprat F etc and Honore E. Piezo1 in smooth muscle cells is involved in hypertension-dependent arterial remodeling. Cell Rep. 2015; 13 (6): 1161-1171.

Disclaimers

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