

Product Information

Human Intestinal Smooth Muscle Cells (HISMC)

Catalog Number	10HU-201	Cell Number	0.5 million cells/vial
Species	<i>Homo sapiens</i>	Storage Temperature	Liquid Nitrogen

Description

Smooth muscle contraction is the fundamental event in gastrointestinal motion. Although many of the biochemical mechanisms underlying the excitation-contraction coupling are not yet defined, it is known that cytosolic Ca²⁺ is the essential component in the coupling phenomenon. Inflammation of the human intestine causes increased levels of smooth muscle-specific actin, which in turn promotes the thickening of the smooth muscle layers. The increased smooth muscle actin may affect force production and further demonstrates the plasticity of smooth muscle cells in the inflamed intestine [1]. Studies also show that human intestinal smooth muscle cells (HISMC) respond to IL-1beta and TNF-alpha stimulation by releasing IL-6, which may significantly contribute to the overall systemic inflammatory response [2]. The availability of HISMC makes it more feasible to study the contractile and proliferative tissue responses of human intestinal smooth muscle.

iXCells Biotechnologies provides high quality Human Intestinal Smooth Muscle Cells (HISMC), which are isolated from human bronchi and bronchioles and cryopreserved at P1, with ≥ 0.5 million cells in each vial. HISMC express α-smooth muscle actin and desmin and are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi. HISMC can further expand for no more than 3 passages in Smooth Muscle Cell Growth Medium (Cat # MD-0034) under the condition suggested by iXCells Biotechnologies.

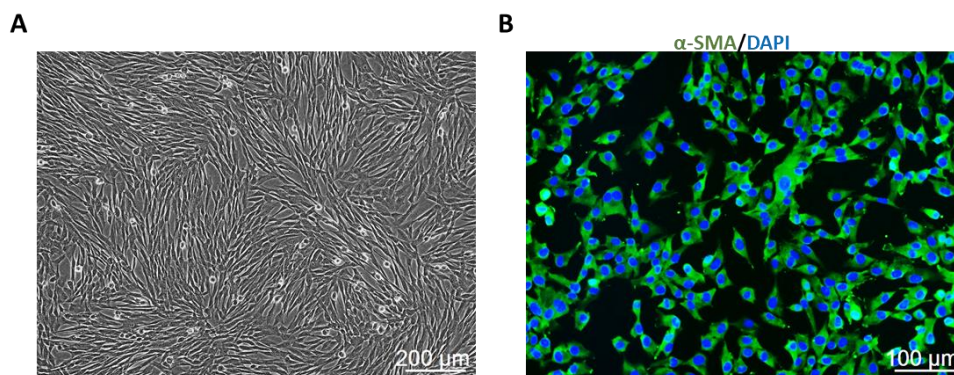


Figure 1. Human Intestinal Smooth Muscle Cells (HISMC). (A) Phase contrast image of HISMC; (B) ICC image using α-SMA antibody.

Product Details

Tissue	Human Intestine
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 minute. 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 Smooth Muscle Cell Growth Medium.
6. Culture the cell in T75 flask. Change the medium every other day till the cells reach 80-90% confluency.

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

Standard Culture Procedure

1. HISMCs 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 (5 mL/T75 flask).
3. Add ~2.5 mL 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 1,000 rpm (~220 g) for 5 minutes and resuspend the cells in desired volume of medium.
5. Seed the cells in the new culture vessels at 5×10^3 cells/cm². Change the medium every other day till the cells reach 80-90% confluency.

References

- [1] Blennerhassett, M. G., Bovell, F. M., Lourenssen, S., McHugh, K. M. (1999) Characteristics of inflammation-induced hypertrophy of rat intestinal smooth muscle cell. *Dig Dis Sci.* 44(7):1265-72.
- [2] Ng, E. K., Panesar, N., Longo, W. E., Shapiro, M. J., Kaminski, D. L., Tolman, K. C., Mazuski, J. E. (2003) Human intestinal smooth muscle cells are potent producers of IL-6. *Mediators Inflamm.* 12(1):3-8.

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