

Product Information

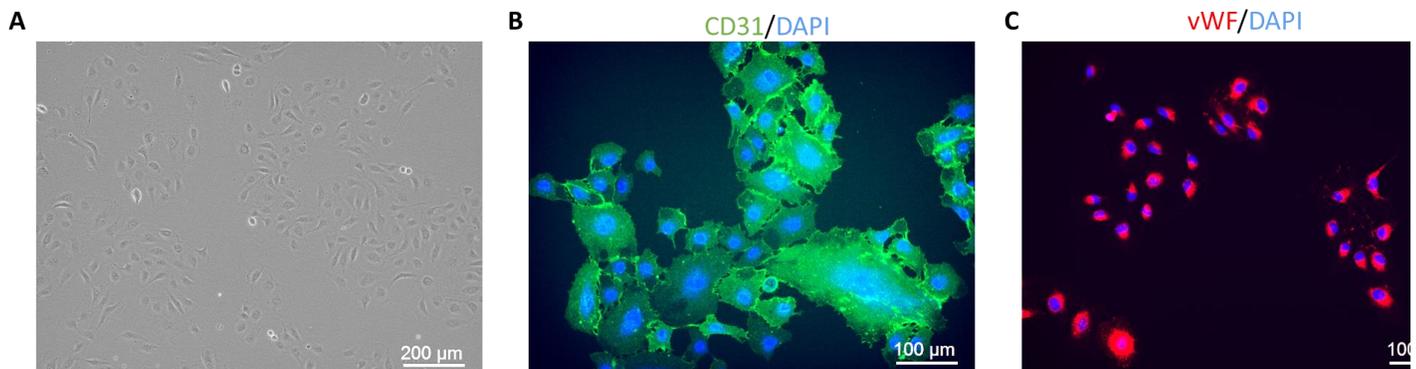
Human Intestinal Microvascular Endothelial Cells (HIMEC)

Catalog Number	10HU-065	Cell Number	0.5 million cells/vial
Species	<i>Homo sapiens</i>	Storage Temperature	Liquid Nitrogen

Description

Endothelial cells lining the microvasculature are known to play a critical “gatekeeper” role in the inflammatory process through their ability to recruit circulating immune cells into tissues and foci of inflammation. Studies show that intestinal microvascular endothelial cells (IMEC) exhibit a strong immune response to LPS challenge and play a critical regulatory role in gut inflammation [1]. Pharmacological inhibition of NOS in activated HIMEC resulted in a significant increase in leukocyte binding [2]. Gene expression profile studies revealed that intestinal endothelial cells express biotinidase, which is involved in biotin recycling [3]. HIMEC cultures have enabled scientists to perform systematic analyses of cytokine profiles with regard to mRNA expression and protein secretion, and to compare these data with cytokine profiles from other endothelial cells.

iXCells Biotechnologies provides high quality HIMEC, which are isolated from human intestinal tissue and cryopreserved at P1, with >0.5 million cells in each vial. HIMEC express vWF/Factor VIII, CD31 (PECAM), and Dil-Ac-LDL by uptake. They are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi and can further expand no more than 3 passages in Endothelial Cell Growth Medium (Cat# MD-0010) under the condition suggested by iXCells Biotechnologies. Further expansion may decrease the cell purity.



Product Details

Tissue	Normal human intestine tissue
Package Size	0.5 million cells/vial
Passage Number	P1
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Endothelial Cell Growth Medium (Cat# MD-0010)

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 5ml fresh **Endothelial Cell Growth Medium** (Cat# MD-0010).
4. Centrifuge at 1,000 rpm (~220 g) for 5 minutes under room temperature.
5. Remove the supernatant and resuspend the cells in fresh Endothelial Cell Growth 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. HIMEC can be cultured in **Endothelial Cell Growth Medium** (Cat# MD-0010).
2. When cells reach ~80-90% confluence, remove the medium, and wash once with sterile PBS (5 mL for one T75 flask).
3. Add 3 mL of 0.25% Trypsin-EDTA to the flask and incubate for 5 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 until cells reach 80-90% confluence.

References

- [1] Jennifer Y Kasper, Maria Iris Hermanns, Christian Cavelius, Annette Kraegeloh, Thomas Jung, Rolf Danzebrink, Ronald E Unger, Charles James Kirkpatrick. (2016) "The role of the intestinal microvasculature in inflammatory bowel disease: studies with a modified Caco-2 model including endothelial cells resembling the intestinal barrier in vitro". Int J Nanomedicine. 11:6353-6364.
- [2] David G. Binion, Sidong Fu, Kalathur S. Ramanujam, Yuh Cherng Chai, Raed A. Dweik, Judith A. Drazba, Justin G. Wade, Nicholas P. Ziats, Serpil C. Erzurum, and Keith T. Wilson. (1998) "iNOS expression in human intestinal microvascular endothelial cells inhibits leukocyte adhesion". Physiology. 275: G592-G603.
- [3] E M Nilsena, Johansen, F L Jahnsen, K E A Lundin, T Scholz, P Brandtzaeg, G Haraldsen. (1998) Cytokine profiles of cultured microvascular endothelial cells from the human intestine. 42: 635-642

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