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Human Dermal Microvascular Endothelial Cells (HDMVEC)

Catalog Number	10HU-019	**Cell Number**	0.5 million cells/vial
Species	*Homo sapiens*	**Storage Temperature**	Liquid Nitrogen

Description

Human Dermal Microvascular Endothelial Cells (HDMVEC) from blood vessels of skin, form the interface between intravascular and extravascular compartments in skins. Compared to endothelial cells elsewhere in the body, HDMVEC exhibit several skin specific characteristics. They actively participate in a variety of physiological processes including wound healing, control of hemostasis, temperature regulation, and modulation of inflammation/leukocyte trafficking [1]. Via proliferation, quiescence, apoptosis, and senescence, HDMVEC show remarkable phenotypic and functional heterogeneity, which in turn allows the cutaneous microvasculature to be in a dynamic balance between maintenance and remodeling [2,3].

iXCells Biotechnologies provides high quality HDMVEC isolated from human skin blood vessels and cryopreserved at P2, with ≥0.5 million cells in each vial. These HBMVEC express von Willebrand Factor (vWF), CD31 (PECAM), and E-Cadherin. They are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi and can be further expanded for no more than 3 passages in Endothelial Cell Growth Medium (Cat# MD-0010) under the conditions suggested by iXCells Biotechnologies. Further expansion may decrease the purity.

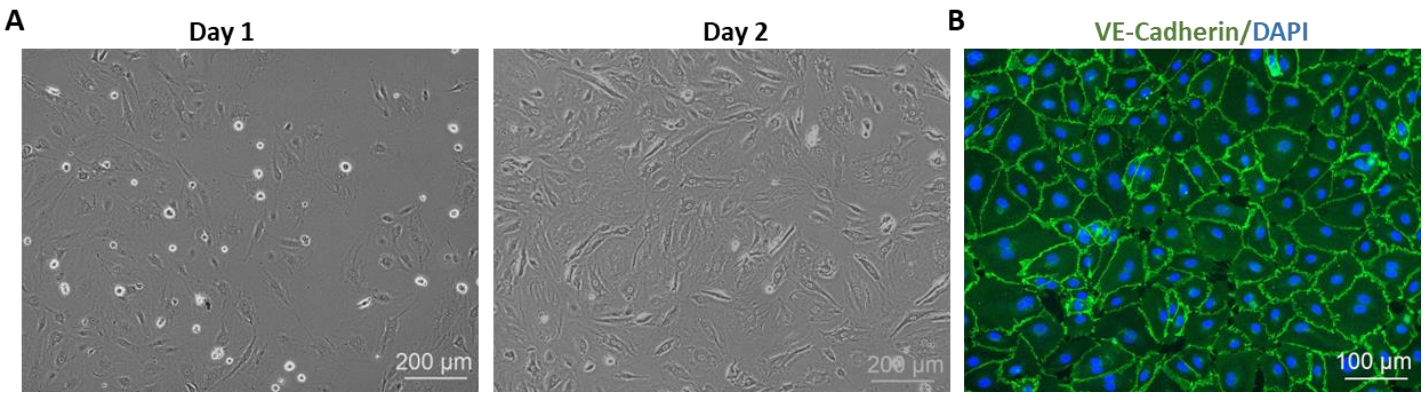

Figure 1. (A) Phase contrast image of HDMVEC on day 1 and day 2 post recovery. (B) Immunofluorescence staining of HDMVEC with antibodies against VE-Cadherin (Green).

Product Details

Tissue	Human skin blood vessels
Package Size	0.5 million cells/vial
Passage Number	P2
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 5 mL 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 desired volume of Endothelial Cell Growth Medium.
6. Culture the cell in T75 flask or the desired culture vessel. Change the medium every other day until cells reach 80-90% confluence. We recommend seeding at 5×10^3 cells/cm^2.

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

Standard Culture Procedure

1. When cells reach ~80-90% confluence, remove the medium, and wash once with sterile PBS (5 mL/T75 flask).
2. Add ~2.5 mL of 0.05% 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.
3. Centrifuge at 1,000 rpm (~220 *g*) for 5 minutes and resuspend the cells in desired volume of medium.
4. Seed in the new culture vessels at 5×10^3 cells/cm^2. Change the medium every other day until cells reach 80-90% confluence.

Reference

[1] Avril M, Tripathi AK, Brazier AJ, Andisi C, Janes JH, Soma VL, Sullivan DJ Jr, Bull PC, Stins MF, Smith JD. (2012) "A restricted subset of var genes mediates adherence of Plasmodium falciparum-infected erythrocytes to brain endothelial cells." Proc Natl Acad Sci USA. 109: E1782-90.

[2] Claessens A, Adams Y, Ghumra A, Lindergard G, Buchan CC, Andisi C, Bull PC, Mok S, Gupta AP, Wang CW, Turner L, Arman M, Raza A, Bozdech Z, Rowe JA. (2012) "A subset of group A-like var genes encodes the malaria parasite ligands for binding to human brain endothelial cells." Proc Natl Acad Sci USA. 109: E1772-81.

[3] Laranjeira MS, Fernandes MH, Monteiro FJ. (2012) "Reciprocal induction of human dermal microvascular endothelial cells and human mesenchymal stem cells: time-dependent profile in a co-culture system." Cell Prolif. 45: 320-34.

Disclaimers