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Product Information

Human Dermal Microvascular Endothelial Cells (HDMVECs)

Catalog Number	10HU-019	Cell Number	0.5 x 10^6 cells/vial
Species	*Homo sapiens*	Storage Temperature	Liquid Nitrogen

Description

Human Dermal Microvascular Endothelial Cells (HDMVECs) from blood vessels of skin, form the interface between intravascular and extravascular compartments in skins. Compared to endothelial cells elsewhere in the body, HDMVECs 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, HDMVECs 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, which are isolated from human skins and cryopreserved at P2, with >0.5 million cells in each vial. HDMVEC express vWF/Factor VIII and CD31 (Figure 1B &1C) and are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi. They can further expand for 16 population doublings in Endothelial Cell Growth Medium (Cat# MD-0010) under the condition suggested by iXCells Biotechnologies.

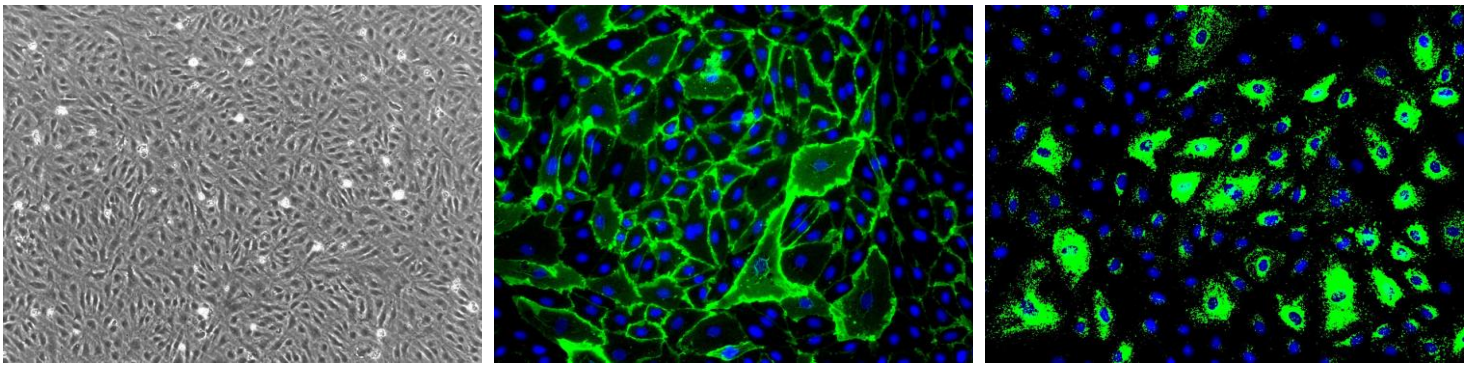

Figure 1. (A) HDMVECs phase contract. **(B)** HDMVECs CD31 staining. **(C)** HDMVEC vWF staining

Product Details

Tissue	Human skin blood vessels
Package Size	0.5 x 10^6 cells/vial
Passage Number	P2
Shipped	Cryopreserved
Storage	Liquid nitrogen
Growth Properties	Adherent
Media	Endothelial Cell Medium (Cat# MDECM)

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 Endothelial Cell Medium (Cat# MDECM).

4. Centrifuge at 1000rpm (~220g) for 5 minutes under room temperature.

5. Remove the supernatant and resuspend the cells in Endothelial Cell 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. HDMVECs can be cultured in Endothelial Cell Medium (Cat# MDECM).

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.

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

References

[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 humanmesenchymal stem cells: time-dependent profile in a co-culture system." Cell Prolif. 45: 320-34.

Disclaimers