India Contact:
Life Technologies (India) Pvt. Ltd.
Mobile: +91-9810521400, Ph: +91-11-42208000
Email: customerservice@lifetechindia.com
Web: www.lifetechindia.com

Product Information

Catalog Number	10HU-012	Cell Number	0.5 million cells/vial
Species	*Homo sapiens*	Storage Temperature	Liquid Nitrogen

Description

Human umbilical vein endothelial cells (HUVECs) are cells derived from the endothelium of veins from the umbilical cord. They are used as a laboratory model system for the study of the function and pathology of endothelial cells (e.g., angiogenesis) [1]. They are used due to their low cost, and simple techniques for isolating them from umbilical cords, which are normally resected after childbirth [2]. HUVECs can be easily made to proliferate in a laboratory setting. They exhibit a cobblestone phenotype when lining vessel walls.

iXCells Biotechnologies provides high quality Human Umbilical Vein Endothelial Cells (HUVEC), which are isolated from human umbilical vein of mix donors, and cryopreserved at P2, with >0.5 million cells in each vial. HUVEC have “cobblestone” morphology and positive staining with vWF/Factor VIII and CD31. HUVEC are one of the mostly used cell types to study endothelial function *in vitro*, including angiogenesis [1], signaling pathway under normal and pathological condition such as oxidative stress, hypoxia [2] and inflammation etc. These HUVEC 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. Additional expansion may decrease the purity.

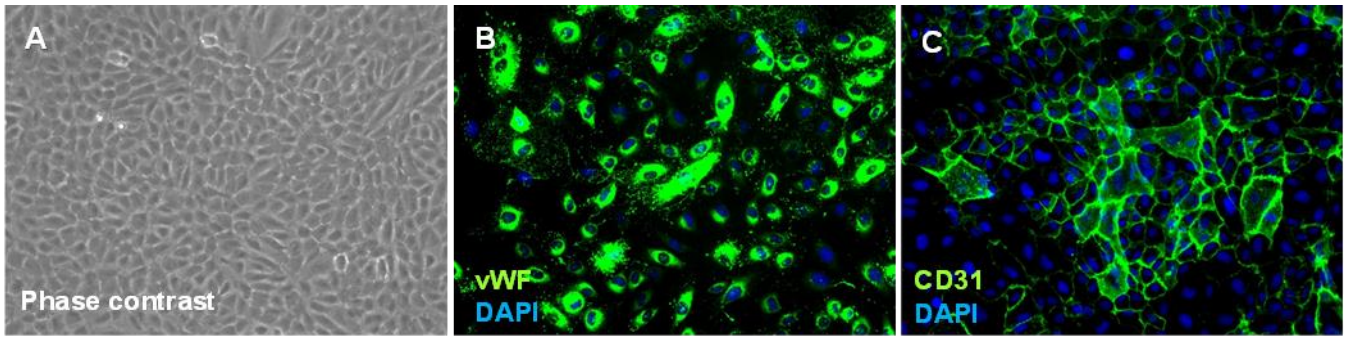

Figure 1. Human Umbilical Vein Endothelial Cells (HUVEC). (**A**) Phase contrast image of HUVEC. (**B & C**) Immunofluorescence staining with antibodies against vWF (B) and CD31 (C).

Product Details

Tissue	Human umbilical cord tissue
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 HUVEC, 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. HUVECs 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/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/cm^2. Change the medium every other day until cells reach 80-90% confluence.

References

[1] Park HJ, Zhang Y, Georgescu SP, Johnson KL, Kong D, Galper JB (2006). "Human umbilical vein endothelial cells and human dermal microvascular endothelial cells offer new insights into the relationship between lipid metabolism and angiogenesis". Stem Cell Rev. 2 (2): 93–102.

[2] Nallamshetty S, Chan SY, and Loscalzo J. (2013) “Hypoxia: a master regulator of microRNA biogenesis and activity”. Free Radic Biol Med. 64: 20-30.

Disclaimers