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Product Information

Human Hepatic Sinusoidal Endothelial Cells (HHSEC)

Catalog Number	10HU-021	**Cell Number**	0.5 million cells/vial
Species	*Homo sapiens*	**Storage Temperature**	Liquid Nitrogen

Description

Human liver contains two distinct endothelial cell types: vascular and sinusoidal. Human Hepatic Sinusoidal Endothelial Cells (HHSEC) are microvascular endothelial cells that exhibit a unique phenotype compared to other endothelial cells—they function as dendritic cells to present antigen for CD4+ T cells. Thus, HHSEC are actively involved in the regulation of the immune response in the liver [1]. HHSEC are actively involved in liver repair as dynamic regulators respond rapidly and locally to environmental zonal stimuli [2].

iXCells Biotechnologies provides high quality HHSEC, which are isolated from normal human liver and cryopreserved at P2, with >0.5 million cells in each vial. HHSEC express vWF/Factor VIII and CD31 (Figure 2). They are negative for HIV-1, HBV, HCV, mycoplasma, bacteria, yeast, and fungi and can further expand in Endothelial Cell Growth Medium (Cat# MD-0010) for no more than 3 passages under the condition suggested by iXCells Biotechnologies. Further expansion may decrease the cell purity.

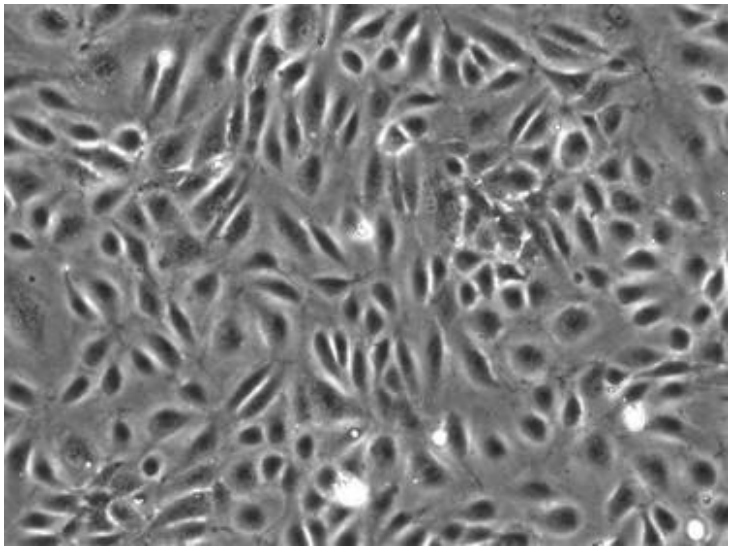

Figure 1. Human Hepatic Sinusoidal endothelial cells (HHSECs) (phase contrast).

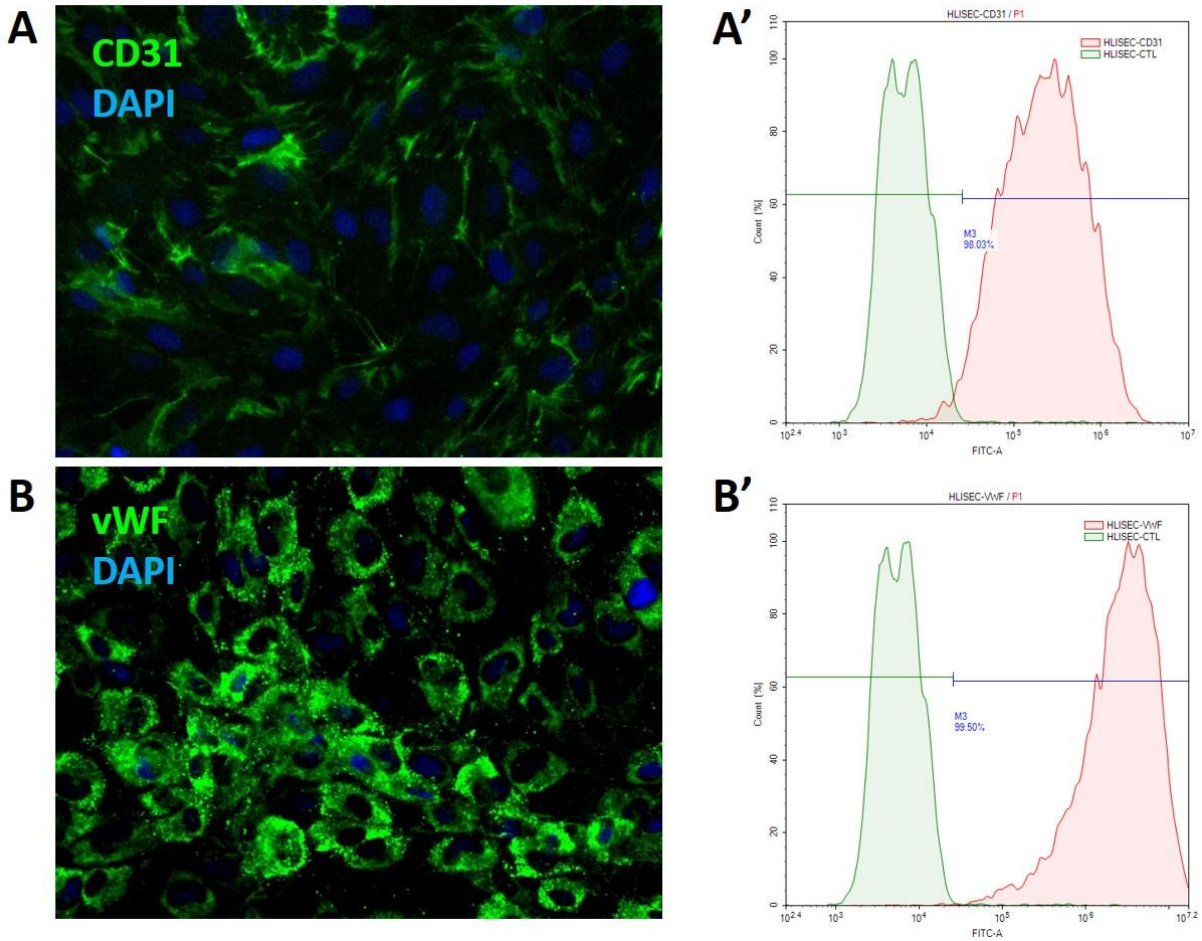

Figure 2. HHSECs provided by iXCells are positive for CD31 **(A)** and vWF **(B)**, as shown by immunostaining. Flow analysis showed that more than 98% of cells are CD31 positive **(A')**, and more than 99% are vWF positive **(B')**.

Product Details

Tissue	Normal human liver
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. Prepare complete medium.
4. Pipette the cells into a 15 mL conical tube with 5 mL fresh **Endothelial Cell Growth Medium** (Cat# MD-0010).
5. Centrifuge at 1,000 rpm (~220 g) for 5 minutes under room temperature.
6. Remove the supernatant and resuspend the cells in fresh Endothelial Cell Growth Medium.
7. Culture the cell in 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. HHSECs 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 ~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 5min and resuspend the cells in desired volume of medium.
8. 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] Limmer A, and Knolle PA. Liver sinusoidal endothelial cells: a new type of organ-resident antigen-presenting cell. Arch Immunol Ther Exp (Warsz) 2001; 49 (1): S7-11.

[2] Wach KE etc. Sinusoidal ultrastructure evaluated during the revascularization of regenerating rat liver. Hepatoloty 2001; 33 (2): 363-378.

Disclaimers

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