Células endoteliales de la arteria umbilical humana (HUAEC)

300698

INFORMACIÓN GENERAL

Descripción

Primary Human Umbilical Artery Endothelial Cells (HUAEC) are isolated from the umbilical artery and provide an arterial counterpart to HUVEC. They are used to study arterial–venous differences in inflammation, nitric oxide signaling and fetal programming in pregnancy-related disorders.
Compared directly with HUVEC, HUAEC respond to inflammatory stimuli such as TNF-α with a distinct pattern of gene regulation, including differences in how they return to homeostasis after the stimulus is removed. This makes them well suited to test whether findings in venous endothelium also hold for arterial endothelium.

Pañuelo de papel	Umbilical cord (artery)
Enfermedad	Normal umbilical artery endothelium (primary cells; non-tumorigenic; neonatal)
Lugar de metástasis	Not applicable (normal, non-tumorigenic primary cell)

Aplicaciones

Arterial–venous differences in inflammation and its resolution; Fetal programming: maternal obesity, oxidative stress and epigenetics; Nitric oxide, eNOS and arginase-2 regulation, epigenetic pharmacology; Angiogenesis assays (Matrigel tube formation, migration); Anti-proliferative screening of angiogenesis inhibitors (VEGF receptor 2)

Sinónimos

- HUAEC
- Human umbilical artery endothelial cells
- provitro 1210112

DONANTE

Edad del donante	Newborn (umbilical cord)
Origen étnico	Lot-specific (see CoA)

CLASIFICACIÓN

Organismo	Humano
Sexo	Específico de cada lote
Propiedades de crecimiento	Adherente
Situación respecto a los OMG	Sin OGM

Detalles sobre la presencia de OMG

No genetic modification; primary human endothelial cells isolated from umbilical artery. Not transformed or immortalized. Tested and confirmed negative for mycoplasma, bacteria, yeast, HIV-1/2, HBV, HCV.

Nivel de bioseguridad	1

CARACTERÍSTICAS

Morfología	Cobblestone (endothelial)

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Tipo de célula	Primary endothelial cells
Tumorigénico	No
Tiempo de duplicación	approx. 24 to 36 hours (lot-specific; guaranteed ≥15 population doublings under ScienCell-recommended conditions)

MANEJO Y CULTIVO

Medio de cultivo

Endothelial Cell Growth Medium

Atmósfera de incubación	37°C, 5% CO_2, saturated humidity.

Suplementos

ScienCell ECM #1001 is pre-supplemented with FBS, endothelial cell growth supplement (ECGS), and antibiotics as specified in the medium kit; no additional serum supplement needed. Coat culture vessels with fibronectin (1–2 µg/cm²) before seeding.

Reactivo de disociación	Subculture reagents as recommended on the certificate of analysis
Recubrimiento de frascos	Fibronectin coating required (1–2 µg/cm²; incubate at 37°C for 30 min, aspirate excess before seeding)

Subcultivo

Subculture the cells at about 75 % confluence. Denser cultures undergo irreversible contact inhibition and stop proliferating. Use the subculture reagents recommended on the certificate of analysis.

Relación de división	1 to 3
Densidad de siembra	More than 6,000 cells/cm²
Renovación de fluidos	24 hours after seeding, then every 48 to 72 hours
Recuperación tras la descongelación	Post-thaw viability ≥ 70 % viable cells. More than 80 % confluence within the expected recovery period.

Descongelación y cultivo

Thaw the cryovial quickly in a 37 °C water bath, swirling gently. Just before the last ice has melted, move the vial to a laminar flow hood and decontaminate its outer surface.
Transfer the cell suspension into a 15 ml centrifuge tube, add 10 ml of Endothelial Cell Growth Medium and centrifuge at 250 × g for 5 minutes.
Remove the supernatant and resuspend the cell pellet in 10 ml of Endothelial Cell Growth Medium. Check cell number and viability.
Divide the suspension between two 25 cm² culture flasks (5 ml each). Using two flasks reduces the risk of losing all cells if a passage fails.
Incubate at 37 °C, 5 % CO_2 and saturated humidity, with the screw caps opened by half a turn for gas exchange.
Change the medium after 24 hours to remove unattached cells, then every 48 to 72 hours, using pre-warmed medium only.
Subculture the cells at about 75 % confluence. Denser cultures undergo irreversible contact inhibition and stop proliferating. Use the subculture reagents recommended on the certificate of analysis.
Recommended seeding density: more than 6,000 cells/cm².

CONTROL DE CALIDAD Y CRIOPRESERVACIÓN

Esterilidad

Mycoplasma contamination is excluded by PCR.
To ensure there is no bacterial, fungal or yeast contamination, cultures are subjected to visual inspection.

Medio de congelación	As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.

Condiciones de almacenamiento

For long-term preservation, store vials in liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable for up to one week only.

Condiciones de envío

Cryopreserved primary cells are shipped on dry ice. On receipt, check the cryovial for damage and transfer it without delay to appropriate storage.

EXPRESIÓN Y SUSCEPTIBILIDAD

Antígenos de superficie

CD31 (PECAM-1) +; vWF (Factor VIII) +; Dil-Ac-LDL uptake +; Ephrin-B2 + (arterial marker); DLL4 + (arterial marker); Notch4 + (arterial marker); NRP1 + (arterial marker)

Receptores expresados

VEGFR2 (KDR); VEGFR1 (Flt1); TIE-2; NRP1 (arterial-specific); Notch receptor (Notch1, Notch4)

Virus

Free of HIV-1, HIV-2, HBV, HCV (confirmed negative; ScienCell #8010 QC)

IDENTIFICADORES

Referencia

Human umbilical artery endothelial cells (HUAEC) (Cytion catalog number 300698)

N.º de identificación fiscal del NCBI	9606
Cellosaurus	Not assigned

ASPECTOS LEGALES Y DE SEGURIDAD

Medidas de seguridad

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments. Primary cells are of human origin, and no known test procedure can ensure the complete absence of infectious agents. Handle all products as potentially infectious.

Garantía

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Se requiere un acuerdo de transferencia de material	Yes