Endoteliálne bunky ľudskej pupočníkovej tepny (HUAEC)

300698

VŠEOBECNÉ INFORMÁCIE

Popis

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.

Tkanivo	Umbilical cord (artery)
Choroba	Normal umbilical artery endothelium (primary cells; non-tumorigenic; neonatal)
Miesto metastáz	Not applicable (normal, non-tumorigenic primary cell)

Aplikácie

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)

Synonymá

- HUAEC
- Human umbilical artery endothelial cells
- provitro 1210112

DARCA

Vek darcu	Newborn (umbilical cord)
Etnická príslušnosť	Lot-specific (see CoA)

KLASIFIKÁCIA

Organizmus	Človek
Sex	Špecifické pre danú šaržu
Rastové vlastnosti	Prívrženec
Stav GMO	Bez GMO

Podrobnosti o štatúte GMO

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.

Úroveň biologickej bezpečnosti	1

CHARAKTERISTIKY

Morfológia	Cobblestone (endothelial)

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Typ bunky	Primary endothelial cells
Tumorigenický	No
Doba zdvojnásobenia	approx. 24 to 36 hours (lot-specific; guaranteed ≥15 population doublings under ScienCell-recommended conditions)

MANIPULÁCIA A KULTIVÁCIA

Kultivačné médium

Endothelial Cell Growth Medium

Inkubačná atmosféra	37°C, 5% CO_2, saturated humidity.

Doplnky stravy

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.

Disociačné činidlo	Subculture reagents as recommended on the certificate of analysis
Povlak fľaše	Fibronectin coating required (1–2 µg/cm²; incubate at 37°C for 30 min, aspirate excess before seeding)

Rozmnožovanie kultúr

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.

Pomer rozdelenia	1 to 3
Hustota výsevu	More than 6,000 cells/cm²
Obnova kvapaliny	24 hours after seeding, then every 48 to 72 hours
Zotavenie po rozmrazení	Post-thaw viability ≥ 70 % viable cells. More than 80 % confluence within the expected recovery period.

Rozmrazovanie a kultivácia

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.

KONTROLA KVALITY A KRYOKONZERVÁCIA

Sterilita

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

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

Podmienky skladovania

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.

Dopravné podmienky

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

PREJAV A NÁCHYLNOSŤ

Povrchové antigény

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

Exprimované receptory

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

Vírusy

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

IDENTIFIKÁTORY

Citácia

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

Daňové identifikačné číslo NCBI	9606
Cellosaurus	Not assigned

PRÁVNE INFORMÁCIE A BEZPEČNOSŤ

Bezpečnostné opatrenia

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.

Záruka

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.

Je potrebná dohoda o prenose materiálu	Yes