Endothelzellen der menschlichen Nabelarterie (HUAEC)

300698

ALLGEMEINE INFORMATIONEN

Beschreibung

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.

Gewebe	Umbilical cord (artery)
Krankheit	Normal umbilical artery endothelium (primary cells; non-tumorigenic; neonatal)
Metastasenherd	Not applicable (normal, non-tumorigenic primary cell)

Anwendungen

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)

Synonyme

- HUAEC
- Human umbilical artery endothelial cells
- provitro 1210112

SPENDER

Alter des Spenders	Newborn (umbilical cord)
Ethnische Zugehörigkeit	Lot-specific (see CoA)

KLASSIFIZIERUNG

Organismus	Mensch
Sex	Los-spezifisch
Wachstumseigenschaften	Anhänger
GVO-Status	Ohne Gentechnik

Angaben zum GVO-Status

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.

Biologische Sicherheitsstufe	1

MERKMALE

Morphologie	Cobblestone (endothelial)

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Zelltyp	Primary endothelial cells
Tumorauslösend	No
Verdopplungszeit	approx. 24 to 36 hours (lot-specific; guaranteed ≥15 population doublings under ScienCell-recommended conditions)

HANDHABUNG UND KULTUR

Nährmedium

Endothelial Cell Growth Medium

Inkubationsatmosphäre	37°C, 5% CO_2, saturated humidity.

Nahrungsergänzungsmittel

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.

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

Subkultivierung

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.

Split-Verhältnis	1 to 3
Aussaatdichte	More than 6,000 cells/cm²
Flüssigkeitswechsel	24 hours after seeding, then every 48 to 72 hours
Erholung nach dem Auftauen	Post-thaw viability ≥ 70 % viable cells. More than 80 % confluence within the expected recovery period.

Auftauen und Kultivierung

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.

QUALITÄTSKONTROLLE UND KRYOKONSERVIERUNG

Sterilität

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

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

Lagerbedingungen

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.

Versandbedingungen

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

EXPRESSION UND ANFÄLLIGKEIT

Oberflächenantigene

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

Exprimierte Rezeptoren

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

Viren

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

BEZEICHNER

Quellenangabe

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

NCBI-Steuer-ID	9606
Cellosaurus	Not assigned

RECHTLICHES UND SICHERHEIT

Sicherheitshinweise

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.

Garantie

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.

Materialübertragungsvereinbarung erforderlich	Yes