Glatte Muskelzellen der menschlichen Lungenarterie (HPASMC)

300706

ALLGEMEINE INFORMATIONEN

Beschreibung

Primary Human Pulmonary Artery Smooth Muscle Cells (HPASMC) are isolated from the pulmonary artery. They are a key model for pulmonary arterial hypertension, including hypoxia-driven proliferation and vascular remodeling.
Hypoxia drives the proliferation of HPASMC, and PDGF-BB shifts them toward a synthetic, migratory phenotype, reproducing key features of pulmonary vascular remodeling. Because the balance of BMP and TGF-β signaling is central to pulmonary arterial hypertension, the cells are also used to study BMPR2-related mechanisms.

Gewebe	Lung (pulmonary artery
Krankheit	Normal pulmonary arterial smooth muscle (non-tumorigenic primary cell)
Metastasenherd	Not applicable (normal, non-tumorigenic primary cell)

Anwendungen

Pulmonary arterial hypertension: BMP/TGF-β balance, proliferation and migration; Hypoxia-induced proliferation, PPARγ and microRNA-21; Long non-coding RNA regulation of migration in pulmonary arterial hypertension; Functional testing of BMPR2 promoter variants in reporter assays; PDGF-BB-induced phenotype switching and metabolomics; Endothelin-1 signaling and proteomics of BMPR2-mutant cells

Synonyme

- HPASMC
- Human pulmonary artery smooth muscle cells
- provitro 1210613

SPENDER

Alter des Spenders	Lot-specific (see CoA)
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 pulmonary artery smooth muscle cells isolated from normal pulmonary arteries. Not transformed or immortalized.

Biologische Sicherheitsstufe	1

MERKMALE

Morphologie	Spindle-shaped (smooth muscle)
Zelltyp	Primary smooth muscle cells

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Tumorauslösend	No
Verdopplungszeit	Not specified by AddexBio; typical primary VSMC doubling time 36–72 hours

HANDHABUNG UND KULTUR

Nährmedium

Smooth Muscle Cell Growth Medium kit (Cytion article number 850075); Smooth Muscle Cell Growth Medium mix (Cytion article number 850074)

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

Nahrungsergänzungsmittel

Supplement as specified in the AddexBio SMC supplement kit (refer to specification sheet). For cryopreservation: complete culture medium + 5% (v/v) DMSO.

Dissoziationsreagenz	Subculture reagents as recommended on the certificate of analysis

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 4,000 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 Smooth Muscle Cell Growth Medium and centrifuge at 250 × g for 5 minutes.
Remove the supernatant and resuspend the cell pellet in 10 ml of Smooth Muscle 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 4,000 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

Proteinexpression

Smooth muscle α-actin; calponin; smooth muscle myosin heavy chain

Viren

Free of HIV, Hepatitis B, Hepatitis C (confirmed negative by AddexBio)

BEZEICHNER

Quellenangabe

Human pulmonary artery smooth muscle cells (HPASMC) (Cytion catalog number 300706)

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

PRODUKTDETAILS

Zusammensetzungstabelle