Células do músculo liso da artéria pulmonar humana (HPASMC)

300706

INFORMAÇÕES GERAIS

Descrição

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.

Tecido	Lung (pulmonary artery
Doença	Normal pulmonary arterial smooth muscle (non-tumorigenic primary cell)
Local da metástase	Not applicable (normal, non-tumorigenic primary cell)

Aplicações

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

Sinónimos

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

DOADOR

Idade do dador	Lot-specific (see CoA)
Etnia	Lot-specific (see CoA)

CLASSIFICAÇÃO

Organismo	Humano
Sexo	Específico do lote
Propriedades de crescimento	Aderente
Estatuto em matéria de OGM	Sem OGM

Detalhes sobre o estatuto dos OGM

No genetic modification; primary human pulmonary artery smooth muscle cells isolated from normal pulmonary arteries. Not transformed or immortalized.

Nível de biossegurança	1

CARACTERÍSTICAS

Morfologia	Spindle-shaped (smooth muscle)
Tipo de célula	Primary smooth muscle cells

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Tumorigénico	No
Tempo de duplicação	Not specified by AddexBio; typical primary VSMC doubling time 36–72 hours

MANUSEAMENTO E CULTURA

Meio de cultura

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

Atmosfera de incubação	37°C, 5% CO_2, saturated humidity.

Suplementos

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

Reagente de dissociação	Subculture reagents as recommended on the certificate of analysis

Subcultura

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.

Rácio de divisão	1 to 3
Densidade de sementeira	More than 4,000 cells/cm²
Renovação de fluidos	24 hours after seeding, then every 48 to 72 hours
Recuperação após o descongelamento	Post-thaw viability ≥ 70 % viable cells. More than 80 % confluence within the expected recovery period.

Descongelamento e cultura

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.

CONTROLO DE QUALIDADE E CRIOPRESERVAÇÃO

Esterilidade

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

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

Condições de armazenamento

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.

Condições de envio

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

EXPRESSÃO E SUSCETIBILIDADE

Expressão proteica

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

Vírus

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

IDENTIFICADORES

Referência

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

Número de identificação fiscal do NCBI	9606
Cellosaurus	Not assigned

ASPECTOS LEGAIS E DE SEGURANÇA

Precauções de segurança

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.

Garantia

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.

É necessário um Acordo de Transferência de Material	Yes

DETALHES DO PRODUTO

Tabela de composição