Cellules musculaires lisses de l'artère pulmonaire humaine (HPASMC)

300706

INFORMATIONS GÉNÉRALES

Description

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.

Tissu	Lung (pulmonary artery
Maladie	Normal pulmonary arterial smooth muscle (non-tumorigenic primary cell)
Site métastatique	Not applicable (normal, non-tumorigenic primary cell)

Applications

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

Synonymes

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

DONATEUR

Âge du donneur	Lot-specific (see CoA)
Origine ethnique	Lot-specific (see CoA)

CLASSIFICATION

Organisme	Humain
Sexe	Spécifique au lot
Propriétés de croissance	Adepte
Statut OGM	Sans OGM

Informations détaillées sur le statut OGM

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

Niveau de biosécurité	1

CARACTÉRISTIQUES

Morphologie	Spindle-shaped (smooth muscle)

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

Type de cellule	Primary smooth muscle cells
Tumorigène	No
Temps de doublement	Not specified by AddexBio; typical primary VSMC doubling time 36–72 hours

MANIPULATION ET CULTURE

Milieu de culture

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

Atmosphère d'incubation	37°C, 5% CO_2, saturated humidity.

Compléments alimentaires

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

Réactif de dissociation	Subculture reagents as recommended on the certificate of analysis

Repiquage

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.

Rapport de fractionnement	1 to 3
Densité de semis	More than 4,000 cells/cm²
Renouvellement des fluides	24 hours after seeding, then every 48 to 72 hours
Récupération après le dégel	Post-thaw viability ≥ 70 % viable cells. More than 80 % confluence within the expected recovery period.

Décongélation et mise en culture

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.

CONTRÔLE QUALITÉ ET CRYOCONSERVATION

Stérilité

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

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

Conditions de stockage

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.

Conditions de livraison

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

EXPRESSION ET SENSIBILITÉ

Expression des protéines

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

Virus

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

IDENTIFIANTS

Référence

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

Numéro d'identification fiscale NCBI	9606
Cellosaurus	Not assigned

ASPECTS JURIDIQUES ET SÉCURITÉ

Consignes de sécurité

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.

Un accord de transfert de matériel est requis	Yes

DÉTAILS DU PRODUIT

Tableau de composition