Cellules musculaires lisses urothéliales humaines (HUSMC)

300707

INFORMATIONS GÉNÉRALES

Description

Primary Human Bladder Smooth Muscle Cells (HBdSMC) are isolated from the smooth muscle layer of the urinary tract. They are used to study the response of the bladder wall to mechanical stretch and as a building block for engineered bladder tissue.
HBdSMC respond to cyclic stretch and hydrostatic pressure that mimic bladder filling with increased proliferation and altered contractility, involving muscarinic receptor signaling. This makes them a model for detrusor remodeling in bladder outlet obstruction and for conditioning cells in bladder tissue engineering.

Tissu	Bladder
Maladie	Normal bladder smooth muscle / detrusor (primary cells; non-tumorigenic)
Site métastatique	Not applicable (normal, non-tumorigenic primary cell)

Applications

Cyclic stretch of the bladder wall, muscarinic receptors and proliferation; Hydrostatic pressure in bladder outlet obstruction: proliferation and contractility; Hypoxia and oxidative stress in bladder ischemia; Rac1 signaling as a target in overactive bladder; Bladder tissue engineering with urothelial and smooth muscle cells

Synonymes

- HBdSMC
- HUSMC
- Human urothelial smooth muscle cells
- provitro 1210631

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 bladder smooth muscle cells. Not transformed or immortalized. Confirmed negative for mycoplasma, bacteria, yeast, HIV-1, HBV, HCV.

Niveau de biosécurité	1

CARACTÉRISTIQUES

Morphologie	Spindle-shaped (smooth muscle)

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Type de cellule	Primary smooth muscle cells
Tumorigène	No
Temps de doublement	approx. 18 to 36 hours (lot-specific; AcceGen equivalent: ~13 population doublings guaranteed)

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 per AcceGen medium kit instructions. Standard SMC growth medium contains FBS (5–10%), EGF, FGF, and insulin as major components. Refer to product-specific CoA.

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

Antigènes de surface

α-smooth muscle actin (α-SMA) +; Desmin +; Calponin (CNN1) +; SM-MHC (MYH11) + (differentiated); h-caldesmon + (differentiated); γ-smooth muscle actin + (differentiated); Connexin 43 +

Récepteurs exprimés

Muscarinic acetylcholine receptor M2 (CHRM2) +; Muscarinic receptor M3 (CHRM3) +; PDGFR-β (CD140b); Adrenergic receptors (β1, β3)

Virus

Free of HIV-1, HBV, HCV (confirmed negative; AcceGen ABC-TC3862 QC)

IDENTIFIANTS

Référence

Human urothelial smooth muscle cells (HUSMC) (Cytion catalog number 300707)

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