

HSC-T6 Cells | 305199

General information

Description

The HSC-T6 cell line is a well-characterized hepatic stellate cell line derived from adult rat liver tissue. These cells play a critical role in liver physiology and pathology, particularly in the processes of liver fibrosis and cirrhosis. Hepatic stellate cells are responsible for the storage of vitamin A in lipid droplets under normal physiological conditions. Upon liver injury, they transdifferentiate into myofibroblast-like cells, which secrete extracellular matrix proteins, contributing to the fibrotic response. The HSC-T6 cell line has been extensively utilized as a model to study these mechanisms due to its ability to mimic the in vivo behavior of activated hepatic stellate cells.

HSC-T6 cells express key markers such as α -smooth muscle actin (α -SMA), glial fibrillary acidic protein (GFAP), and desmin, which are indicative of their myofibroblastic phenotype. These cells also exhibit significant proliferative capacity and are responsive to various cytokines and growth factors, making them an invaluable tool for investigating the signaling pathways involved in hepatic fibrosis. Researchers have employed HSC-T6 cells to explore therapeutic targets and interventions aimed at mitigating fibrosis and promoting liver regeneration. The availability of this cell line has thus facilitated significant advancements in the understanding of liver disease and the development of potential treatments.

Organism Rat

Tissue Liver

Synonyms HSCT6

Characteristics

Age Adult

Gender Male

Morphology Epithelial

Growth properties Adherent

Identifiers / Biosafety / Citation

Citation HSC-T6 (Cytion catalog number 305199)

Biosafety level 1

Expression / Mutation

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Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO ₃ , w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
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Medium supplements	Supplement the medium with 10% FBS
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Passaging solution	Accutase
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Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
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Split ratio	1:2 to 1:4
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Fluid renewal	2 to 3 times per week
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Freeze medium	CM-1 (Cytion catalog number 800100)
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Handling of cryopreserved cultures

1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required.
3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains.
4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently.
6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth.
8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

Quality control / Genetic profile / HLA

Sterility

Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods.

To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.