Product sheet

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

Breed/Subspecies	Sprague Dawley
Age	Adult
Gender	Male
Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

Citation	HSC-T6 (Cytion catalog number 305199)
Biosafety level	1

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NCBI_TaxID	10116
CellosaurusAccession	CVCL_0315

Biomolecular Data

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
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.
Fluid renewal	2 to 3 times per week
Freeze medium	As a cryopreservation medium, we use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Thawing and Culturing Cells	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.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
Shipping Conditions	Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.
Storage Conditions	For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Quality Control & Molecular Analysis

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.