Product sheet

MHCC-97H Cells | 305442

Renseignements généraux

Description	The MHCC-97H cell line is a human hepatocellular carcinoma (HCC) model with a high metastatic potential. It was established from the MHCC97 parental line, derived from a male patient with HCC linked to hepatitis B virus (HBV) infection. MHCC-97H has been extensively utilized in studies focusing on cancer metastasis, particularly because it consistently demonstrates spontaneous lung metastases following orthotopic implantation in mouse models. This feature makes it a valuable resource for exploring the mechanisms of HCC progression and metastasis. MHCC-97H cells exhibit an epithelial morphology and possess key genetic and molecular characteristics contributing to their aggressive metastatic behavior. The line is noted for its upregulation of matrix metalloproteinases (MMP-2 and MMP-9), which facilitate extracellular matrix degradation and promote invasive capabilities. Proteomic analyses have identified several differentially expressed proteins in MHCC-97H compared to its low-metastatic counterpart MHCC-97L, including elevated levels of pyruvate kinase M2 and S100 calcium-binding protein A4. These findings highlight their utility in studying the molecular pathways governing metastasis. MHCC-97H is used in preclinical research for testing therapeutic strategies targeting metastasis. In vivo models involving this cell line allow researchers to investigate the efficacy of treatments aimed at mitigating metastatic spread, especially to the lungs. Additionally, MHCC-97H aids in the development of biomarkers for predicting HCC aggressiveness and in studying the tumor microenvironment's role in metastasis. These applications underscore its critical importance in advancing our understanding of hepatocellular carcinoma biology.
Organism	Human
Tissue	Liver
Disease	Adult hepatocellular carcinoma
Synonyms	MHCC 97-H, MHCC97-H, MHCC97H

Caractéristiques

Age	39 years
Gender	Male
Ethnicity	Chinese
Growth properties	Adherent

Données réglementaires

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Citation	MHCC-97H (Cytion catalog number 305442)
Biosafety level	2
NCBI_TaxID	9606
CellosaurusAccession	CVCL_4972

Données biomoléculaires

Tumorigenic	High metastatic potential
Viruses	Transformant: Hepatitis B virus (HBV)
Mutational profile	Mutation: BRD7, p.Glu277Glyfs*18 (c.830_831delAG); Mutation: KEAP1, p.Pro445Glnfs*13 (c.1334delC); Mutation: TP53, p.Glu51Ter (c.151G>T)

Manipulation

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.
Seeding density	1.5 to 4 x 10^4 cells/cm^2
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.

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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.

Contrôle de la qualité et analyse moléculaire

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.