MHCC-97H-Luc

305687

GENERAL INFORMATION

Description

MHCC-97H-Luc is a bioluminescent derivative of the human MHCC-97H hepatocellular carcinoma cell line, engineered to stably express a firefly luciferase reporter gene. The parental MHCC-97H cell line was established from a hepatocellular carcinoma in a 39-year-old Chinese male patient and is characterized by high metastatic potential, as reflected by its designation as the high-metastasis subline of the MHCC97 series. MHCC-97H cells are associated with hepatitis B virus (HBV) transformation and exhibit aggressive invasive behavior, making them a clinically relevant model for studying highly metastatic hepatocellular carcinoma and therapeutic strategies targeting invasion and dissemination.

The stable luciferase integration in MHCC-97H-Luc enables sensitive, noninvasive bioluminescence imaging (BLI) of tumor burden in orthotopic liver implantation and subcutaneous xenograft models using immunocompromised hosts. The emitted signal correlates with viable tumor cell number, supporting longitudinal monitoring of tumor engraftment, intrahepatic spread, and distant metastasis. MHCC-97H-Luc is particularly valuable for in vivo evaluation of anti-metastatic agents, kinase inhibitors, and novel targeted therapies against highly invasive hepatocellular carcinoma, as well as for investigating tumor microenvironment interactions and molecular mechanisms underlying HCC metastasis.

MHCC-97H-Luc retains the high metastatic potential and HBV-associated molecular features of the parental MHCC-97H line, providing a relevant and aggressive preclinical platform for hepatocellular carcinoma research. The luciferase reporter enhances experimental sensitivity and enables real-time pharmacodynamic assessment. Researchers should validate luciferase activity, metastatic behavior, and growth kinetics under their specific experimental conditions prior to large-scale in vivo use.

Tissue	Liver
Disease	Adult hepatocellular carcinoma

Synonyms

- MHCC 97-H
- MHCC97-H
- MHCC97H

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Hepatocyte-like
Tumourigenic	High metastatic potential

IDENTIFIERS

Citation

MHCC-97H-Luc (Cytion catalog number 305687)

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NCBI TaxID	9606
Cellosaurus	CVCL_4972

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

Luc2 (firefly, codon-optimized)

Viruses

Transformant: Hepatitis B virus (HBV)

HANDLING AND CULTURE

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

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

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.

Split ratio	1 to 3
Seeding density	2-4*10^4/cm²
Fluid renewal	2 to 3 times per week

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium.
Follow the procedure described under Post-Thaw Recovery

QUALITY CONTROL AND CRYOPRESERVATION

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

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.

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.

DONOR

Donor age	39 years
Ethnicity	Chinese

LEGAL AND SAFETY

Safety precautions

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.

Warranty

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.

Material Transfer Agreement required	Yes