**Product sheet**

# MHCC-97H-Luc Cells | 305687

## General information

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| **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.<br><br>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.<br><br>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. |
| **Organism** | Human |
| **Tissue** | Liver |
| **Disease** | Adult hepatocellular carcinoma |
| **Synonyms** | MHCC 97-H, MHCC97-H, MHCC97H |

## Characteristics

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| **Age** | 39 years |
| **Gender** | Male |
| **Ethnicity** | Chinese |
| **Morphology** | Epithelial-like |
| **Cell type** | Hepatocyte-like |

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| **Growth properties** | Adherent |

## Regulatory Data

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| **Citation** | MHCC-97H-Luc (Cytion catalog number 305687) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 9606 |
| **CellosaurusAccession** | CVCL_4972 |

## Biomolecular Data

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| **Antigen expression** | Luc2 (firefly, codon-optimized) |
| **Tumorigenic** | High metastatic potential |
| **Viruses** | Transformant: Hepatitis B virus (HBV) |

## Handling

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| **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 |
| **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 |

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| **Seeding density** | 2-4*10^4/cm² |
| **Fluid renewal** | 2 to 3 times per week |
| **Freeze medium** | As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability. |
| **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.<br>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.<br>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.<br>4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.<br>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.<br>6. Centrifuge the mixture at 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium.<br>7. Follow the procedure described under Post-Thaw Recovery |
| **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