Product sheet

HuH7 Cells | 300156

General information

Description	HuH-7 cells are a type of epithelial-like, tumorigenic cell line initially taken from a liver tumor in a 57-year-old Japanese male in 1982. The human hepatoma-derived HuH-7 cell line and its derivatives have been widely used in research as a convenient experimental substitute for primary hepatocytes. In particular, they have been instrumental in hepatitis C research and used as host cells for propagating the virus in vitro. HuH-7 cells have played a crucial role in hepatitis C research, especially when it comes to drug development. Prior to 2005, researchers were unable to cultivate the hepatitis C virus in the laboratory, making it difficult to test potential drug candidates against it. The introduction of the HuH-7 cell line changed that. These cells are highly permissive to the replication of the hepatitis C virus, making them ideal for in vitro testing. By using the HuH-7 cells, researchers were able to screen drug candidates against laboratory-grown hepatitis C, which paved the way for the development of new drugs to fight the virus. Unlike other established human hepatoma cell lines, HuH-7 cells can be propagated in a chemically defined medium containing trace amounts of selenium in place of serum. This allows for systematic studies of the in vitro effects of various compounds on their growth and metabolism.
Organism	Human
Tissue	Liver
Disease	Hepatocellular carcinoma
Metastatic site	Hepatoma
Synonyms	HuH-7, HUH-7, Huh-7, Huh7, HUH7, HUH7.0, JTC-39, Japanese Tissue Culture-39

Characteristics

Age	57 years
Gender	Male
Ethnicity	Japanese
Morphology	Epithelial-like
Growth properties	Adherent

Regulatory Data

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Citation	HuH7 (Cytion catalog number 300156)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0336

Biomolecular Data

Tumorigenic	Yes, in nude mice.
Viruses	Negative for HPV, HCV and HIV.

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Doubling time	48 hours
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 to 2 x 10^4 cells/cm^2 during routine cell culture
Fluid renewal	Every 3 days
Post-Thaw Recovery	Start culture using 2 to 3 x 10^4 cells/cm^2. The cells will recover within 24 to 48 hours.

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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.
Flask Coating	None
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.