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. Most HuH-7 cells have a chromosome number between 55 and 63 and typically grow as 2D monolayers. The growth medium for HuH-7 cells should be renewed 2-3 times a week or as needed according to the media pH, and cell confluency should be maintained between 30 to 90%. The doubling time of these cells is 24 to 50 hours. In comparison to HepG2 cells, which have been commonly used as a model for the study of synthesis and secretion of human apoB-100, Huh-7 cells were adopted as an alternative model with the assumption that they would be superior in some respects of lipoprotein metabolism, including VLDL secretion. However, it was found that Huh-7 cells did not offer any advantages over HepG2 cells as a general model of human apoB100-lipoprotein 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

Identifiers / Biosafety / Citation

Citation	HuH7 (Cytion catalog number 300156)
Biosafety level	1
Depositor	T. Lindl

Expression / Mutation

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

Handling

Culture Medium	RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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.
Split ratio	A ratio of 1:4 to 1:6 is recommended

Seeding density	1 to 2 x 10^4 cells/cm^2 during routine cell culture
Fluid renewal	Every 3 days
Freezing recovery	Start culture using 2 to 3 x 10^4 cells/cm^2. The cells will recover within 24 to 48 hours.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)
Handling of cryopreserved cultures	HuH7 cells are shipped in a deep-frozen state on dry ice. Upon receipt, confirm that the vial remains frozen. For storage, place the cryovial immediately at temperatures below -150 degrees. If you plan to culture the cells immediately, swiftly thaw the vial by shaking it in a 37 degrees water bath with clean water and an antimicrobial agent for 40-60 seconds. Remove the vial once a small ice clump persists, ensuring it remains cold. Proceed with all subsequent steps under aseptic conditions. In a sterile flow hood, disinfect the cryovial with 70% ethanol. Then, gently open the vial and transfer the cell suspension into a 15 ml centrifuge tube pre-filled with 8 ml of room temperature culture medium. Gently mix the cells. For cell separation, centrifuge at 300 x g for 3 minutes and dispose of the supernatant. Skipping centrifugation is optional, although any residual freezing medium should be removed after 24 hours. Resuspend the pellet gently in 10 ml of fresh culture medium and divide between two T25 culture flasks. Follow the subculture protocol for subsequent steps.

Quality control / Genetic profile / HLA

Sterility	Mycoplasma contamination is rigorously 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.

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STR profile	**Amelogenin**: x,x **CSF1PO**: 11 **D13S317**: 10 **D16S539**: 10 **D5S818**: 12 **D7S820**: 11 **TH01**: 7 **TPOX**: 8,11 **vWA**: 18 **D3S1358**: 15 **D21S11**: 30 **D18S51**: 15 **Penta E**: 11 **Penta D**: 12 **D8S1179**: 14,15 **FGA**: 22,23 **D1S1656**: 16 **D6S1043**: 13,15 **D2S1338**: 19 **D12S391**: 20 **D19S433**: 13,14
HLA alleles	**A***: 11:01:01 **B***: 02.01.1900 06:01 **C***: 01:02:01 **DRB1***: 08:03:02 **DQA1***: 01:03:01 **DQB1***: 06:01:01 **DPB1***: 02:01:02