HROHep03

300197

GENERAL INFORMATION

Description

HROHep03 is a human hepatocellular adenocarcinoma cell line established from the primary liver tumor of a 71-year-old Caucasian female patient within the HRO biobank series of patient-derived tumor cell lines developed by PD Dr. Michael Linnebacher since 2006. The tumor was classified as a primary adenocarcinoma at TNM stage T0NxMx, grade 3, reflecting a high-grade hepatic adenocarcinoma without confirmed distant metastasis at the time of tissue harvest. HROHep03 grows as an adherent monolayer with fibroblast-like morphology and was confirmed free of human pathogenic viruses HBV, HCV, and HIV, consistent with the stringent quality control standards of the Linnebacher biobank series.
HROHep03 is applicable in hepatocellular adenocarcinoma research, studies of high-grade liver tumor cell biology, drug sensitivity and resistance testing (sorafenib, cisplatin, 5-FU), liver tumor invasion and migration assays, and molecular pathway analysis. As part of the HRO biobank, this line provides a patient-specific biological resource that can be paired with matched immunological material from the same patient for personalized oncology research. Its fibroblast-like morphology distinguishes it phenotypically from the more common hepatocyte-like HCC lines and may reflect epithelial-to-mesenchymal features acquired during tumor progression or in vitro adaptation.

Tissue	Liver
Disease	Primary adenocarcinoma, T0NxMx stage, grade 3
Metastatic site	Not applicable (TNM stage T0NxMx; no confirmed distant metastasis at time of sample collection)

Applications

Hepatocellular adenocarcinoma research; high-grade HCC modeling; drug sensitivity testing (sorafenib, cisplatin, 5-FU); liver tumor invasion and migration; patient-matched HRO biobank studies

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
GMO status	Non-GMO

GMO status details

No genetic modification; wildtype patient-derived hepatic adenocarcinoma cell line established by PD Dr. Linnebacher. Confirmed free of HBV, HCV, HIV.

Biosafety level	1

CHARACTERISTICS

Morphology	Fibroblast-like
Cell type	Fibroblast-like (hepatocellular carcinoma)
Doubling time	approx. 48 to 72 hours

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IDENTIFIERS

Citation

HROHep03 (Cytion catalog number 300197)

NCBI TaxID	9606
Cellosaurus	CVCL_2U72

EXPRESSION AND SUSCEPTIBILITY

Viruses

Free of human pathogenic viruses HBV, HCV, HIV.

HANDLING AND CULTURE

Culture medium

DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)

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 x 10^4 cells/cm^2
Fluid renewal	Every 3 to 5 days
Post-thaw recovery	2 days

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 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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	71 years
Ethnicity	Caucasian

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.

Third-party agreements apply	Yes