Product sheet

Chang Liver (HeLa) Cells | 300139

General information

Description	The Chang Liver cell line, originally believed to be derived from normal human liver tissue, has undergone significant reclassification following advanced genetic profiling. STR PCR DNA profiling techniques have demonstrated that the Chang Liver cell line is indistinguishable from the HeLa cell line, suggesting that it is not derived from hepatocyte cells as previously thought, but rather should be considered a HeLa derivative. This revelation has important implications for researchers using this cell line, emphasizing the need for careful interpretation of experimental results derived from its use. HeLa cells, originally taken from Henrietta Lacks, a Black woman, in the early 1950s, are known for their robust growth and genetic stability in vitro, characteristics likely shared by the Chang Liver cell line given its genetic similarity. This background necessitates that studies employing the Chang Liver cell line in research related to liver function or diseases may need to be re-evaluated or confirmed with additional hepatocyte-specific models. The misidentification also highlights broader issues in cell culture practices, including cross-contamination and mislabeling, underscoring the importance of regular authentication of cell lines used in research settings.
Organism	Human
Tissue	Liver
Disease	Adenocarcinoma
Synonyms	Chang-liver, Chang Cells, Chang, CHL

Characteristics

Age	30 years
Gender	Female
Morphology	Epithelial-like
Growth properties	Adherent

Regulatory Data

Citation	Chang Liver (HeLa) (Cytion catalog number 300139)
Biosafety level	1
NCBI_TaxID	9606

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CellosaurusAccession	CVCL_0238

Biomolecular Data

Isoenzymes	G6PD, A
Tumorigenic	Yes, in Syrian hamsters
Viruses	Tested MHV (mouse hepatitis virus) negative
Virus susceptibility	Poliovirus 1, 2, 3, adenovirus 3, vesicular stomatitis (Indiana)
Reverse transcriptase	Negative
Products	Keratin

Handling

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
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.
Seeding density	1 x 10^4 cells/cm^2 will yield in a confluent layer in about 4 days
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 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.

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.