Product sheet

Hepa 1-6 Cells | 400474

General information

Description	The Hepa 1-6 cell line is a well-characterized model derived from a hepatoma induced in an adult mouse. This cell line is commonly used in biomedical research with a focus on studying liver cancer, liver metabolism, and toxicology. The cells are of epithelial morphology and exhibit an undifferentiated hepatocellular carcinoma phenotype. Hepa 1-6 is particularly valuable for investigating the biochemical pathways involved in liver function and the cellular mechanisms underlying hepatocarcinogenesis. Hepa 1-6 cells are known for their ability to be cultured easily and maintain stable growth and reproduction under standard laboratory conditions. They express several cytochrome P450 enzymes, making them an excellent tool for pharmacological and toxicological studies. These cells are also used to explore the regulation of gene expression in liver cells and to understand the impact of various substances on liver function. Due to their robust nature and relevance to human liver diseases, Hepa 1-6 continues to be a crucial resource in the field of liver disease research.
Organism	Mouse
Tissue	Liver
Disease	Hepatocellular carcinoma
Synonyms	HEPA 1-6, Hepa-1-6, Hepa1-6

Characteristics

Breed/Subspecies	C57/L
Gender	Female
Morphology	Epithelial-like
Growth properties	Adherent

Regulatory Data

Citation	Hepa 1-6 (Cytion catalog number 400474)
Biosafety level	1
NCBI_TaxID	10090

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CellosaurusAccession	CVCL_0327

Biomolecular Data

Tumorigenic	Yes, in C57BL/6 mice.
Viruses	Ectromelia virus (mousepox): Negative.
Products	Albumin, alpha fetoprotein (AFP, alpha-fetoprotein), albumin, alpha antitrypsin (alpha-1-antitrypsin), amylase

Handling

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)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Doubling time	25 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	1×10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	Good. Allow cells to recover from the freezing process for 24 to 48 hours.
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.

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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.