Product sheet

HEP3B Cells | 305141

General information

Description	The Hep3B cell line, derived from an 8-year-old child with liver cancer, is a pivotal model in the study of human liver cancer cells and their responses to various therapeutic agents. Hep3B cells contain an integrated hepatitis B virus genome and is integral in the investigation of differential drug responses due to its unique genetic and phenotypic characteristics. The Hep 3B human hepatoma cell line is renowned for its extensive expression of liver-specific proteins such as alpha-fetoprotein (AFP), albumin, and various other markers, making it an invaluable tool in drug metabolism and hepatotoxicity studies. This wide array of expressed proteins allows for a comprehensive assessment of how liver cancer cells interact with and metabolize therapeutic agents. The Hep 3B cell line and its derivative cell lines, such as luciferase-expressing variants, enable the tracking of tumor growth and metastasis in vivo, facilitating the study of liver cancer progression and the efficacy of potential treatments. The Hep3B cell line stands out as a crucial resource for advancing our understanding of liver cancer biology and the development of more effective therapeutic strategies.
Organism	Human
Tissue	Liver
Disease	Childhood hepatocellular carcinoma
Synonyms	Hep 3B2_1-7, HEP3B217, Hep 3B2, HEP-3B2, HEP3B2, Hep-3B, HEP-3B, Hep 3B, Hep3B, HEP3B

Characteristics

Age	8 years
Gender	Male
Ethnicity	African
Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	Hep 3B2.1-7 (Cytion catalog number 305141)

Biosafety level	1

Expression / Mutation

Protein expression	Alpha Fetoprotein(Alpha-Fetoprotein), Hepatitis B Surface Antigen(Hbsag), Albumin, Alpha2 Macroglobulin(Alpha-2-Macroglobulin), Alpha1 Antitrypsin(Alpha-1-Antitrypsin), Transferrin,, Alpha1 Antichymotrypsin(Alpha-1-Antichymotrypsin), Haptoglobin, Cerulopl
Tumorigenic	Yes

Handling

Culture Medium	EMEM, w: 2 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: EBSS, w: 1 mM Sodium pyruvate, w: NEAA (Cytion article number 820100c)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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	1:2 to 1:4
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

Handling of cryopreserved cultures

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. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours.
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.

Quality control / Genetic profile / HLA

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.

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STR profile

Amelogenin: x,x
CSF1PO: 8
D13S317: 12,14
D16S539: 10
D5S818: 13
D7S820: 8,10
TH01: 6,7
TPOX: 9
vWA: 17
D3S1358: 15
D21S11: 30,31
D18S51: 20
Penta E: 5,16
Penta D: 12,14
D8S1179: 12
FGA: 18