CBRH7919

305479

GENERAL INFORMATION

Description

The CBRH7919 cell line is a rat hepatoma model frequently utilized in cancer research to investigate liver cancer mechanisms and therapeutic interventions. Derived from hepatocellular carcinoma in rats, these cells are characterized by their rapid proliferation and serve as a useful model for studying hepatocarcinogenesis and liver-specific metabolic functions. Recent studies have highlighted the CBRH7919 cell line's involvement in evaluating the effects of various bioactive compounds on tumor cell growth and signaling pathways.
One significant area of research involving CBRH7919 cells includes the exploration of how natural compounds impact cell proliferation and apoptosis. For instance, choline plasmalogens (ChoPlas) extracted from swine liver have been shown to inhibit the proliferation of CBRH7919 cells. Mechanistically, ChoPlas treatment was found to increase Caveolin-1 expression while reducing phospho-Akt (pAkt) and Bcl-2 levels, thus influencing the PI3K/Akt signaling pathway. This modulation leads to cell cycle arrest at the G1/S transition, accompanied by a decrease in cyclin-dependent kinases (CDK2, CDK4) and cyclins E and D, which are crucial regulators of cell cycle progression.
Additional research has linked the expression of specific proteins like fudenine to metabolic regulation in CBRH7919 cells. Fudenine, a truncated rat homologue of mouse prominin, is reported to be upregulated under high glucose conditions and can increase GAPDH expression in CBRH7919 cells. This suggests that fudenine could play a role in glucose metabolism and potentially influence cellular energy dynamics and stress responses, making CBRH7919 cells a valuable model for diabetes and metabolism-related cancer research.

Tissue	Liver
Disease	Hepatocellular carcinoma

Synonyms

- CBRH-7919

CLASSIFICATION

Organism	Rat
Sex	Unspecified
Growth properties	Adherent
Biosafety level	1

IDENTIFIERS

Citation

CBRH7919 (Cytion catalog number 305479)

NCBI TaxID	10116
Cellosaurus	CVCL_7176

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 20% FBS

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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	2-4*10^4/cm²

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

Breed / subspecies	Wistar
Donor age	Unspecified

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.

Material Transfer Agreement required	Yes

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