HCC70

305464

GENERAL INFORMATION

Description

The HCC70 cell line is derived from a triple-negative breast cancer (TNBC), a subtype that lacks expression of estrogen, progesterone, and HER2 receptors, making it difficult to treat due to limited targeted therapies. HCC70 cells are notable for their basal-like 1 (BL1) classification within TNBC subtypes, which impacts their response to chemotherapy and treatment strategies. Importantly, HCC70 cells express the G-protein-coupled estrogen receptor GPR30 at significant levels. GPR30 has been associated with rapid signaling responses to estrogens like 17β-estradiol, influencing cell proliferation and other oncogenic pathways.
A key genetic characteristic of HCC70 is the presence of a TP53 mutation, specifically the R248Q variant. This mutation is associated with gain-of-function (GOF) phenotypes that contribute to cancer cell survival and aggressive behavior. In studies, R248Q mutation in HCC70 cells has been linked to enhanced cell deformability and altered PARP1 localization, implying potential sensitivity to PARP inhibitors.
Research into drug responses in HCC70 and similar TNBC cell lines has highlighted the efficacy of proteasome inhibitors and platinum-based therapies. These treatments have shown promise, with drugs like bortezomib demonstrating cytotoxic effects. The interplay between chemotherapeutic resistance and specific receptor signaling, such as that mediated by GPR30, underscores the complexity of targeting TNBC subtypes like those modeled by HCC70.

Tissue	Mammary gland
Disease	Breast ductal carcinoma

Synonyms

- HCC-70
- HCC 70
- HCC0070
- Hamon Cancer Center 70

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Epithelial cell

IDENTIFIERS

Citation

HCC70 (Cytion catalog number 305464)

NCBI TaxID	9606
Cellosaurus	CVCL_1270

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EXPRESSION AND SUSCEPTIBILITY

Protein expression

Epithelial glycoprotein 2 (EGP2), cytokeratin 19

Oncogenes

Her2/neu-, p53+ (overexpressed)

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 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.

Fluid renewal	2 to 3 times per week

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	49 years
Ethnicity	African American

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