HCC1143

305545

GENERAL INFORMATION

Description

The HCC1143 cell line is derived from a human triple-negative breast cancer (TNBC), specifically lacking estrogen receptor (ER), progesterone receptor (PR), and HER2 expression. This cell line is known for its use in modeling aggressive breast cancer phenotypes and understanding mechanisms underlying treatment resistance. HCC1143 exhibits distinct characteristics, including heterogeneity in cell subpopulations, contributing to its relevance in research focused on phenotypic plasticity and tumor cell state transitions. Studies utilizing HCC1143 have demonstrated that different cell states within the line can transition between luminal, basal, and mesenchymal differentiation states under therapeutic pressures, highlighting its role in studying therapy-induced phenotypic changes and drug resistance mechanisms. HCC1143 cells have been used in various experimental contexts, including investigations of resistance mechanisms to chemotherapy agents like paclitaxel. Single-cell RNA sequencing (scRNA-seq) has revealed subpopulations with differential gene expression profiles linked to treatment resistance. For example, specific subpopulations such as AKR1C3+, IDO1+, and HEY1+ cells have shown increased representation following prolonged paclitaxel treatment, suggesting their role as drug-resistant phenotypes. These subtypes are associated with pathways involving reactive oxygen species (ROS), inflammatory responses, and cell cycle regulation, indicating complex adaptations that facilitate survival under chemotherapeutic stress.
Research on HCC1143 has also extended to targeted therapy studies. The application of inhibitors targeting components like ADAM-17 has shown potential in reducing the invasiveness and proliferation of this cell line, supporting its application as a model for testing novel anticancer strategies. These findings underscore HCC1143's value for exploring both therapeutic responses and the underlying cellular dynamics that drive drug resistance in TNBC.

Tissue	Breast
Disease	Carcinoma

Synonyms

- HCC-1143
- Hamon Cancer Center 1144

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Epithelial cell

IDENTIFIERS

Citation

HCC1143 (Cytion catalog number 305545)

NCBI TaxID	9606
Cellosaurus	CVCL_1245

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EXPRESSION AND SUSCEPTIBILITY

Protein expression

Epithelial glycoprotein 2 (EGP2), cytokeratin 19

Oncogenes

Her2/neu-, p53+

Mutational profile

Mutation: TP53, p.Arg248Gln (c.743G>A), homozygous

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 TrypLE Express, 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	3 to 4 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	52 years
Ethnicity	Caucasian

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