

HCC1569 Cells | 305784

General information

Description

HCC1569 is a human breast cancer cell line derived from a primary ductal carcinoma. It exhibits a basal-like phenotype and is characterized as estrogen receptor (ER)-negative and HER2-positive, a molecular subtype with distinct clinical and therapeutic implications. Like other basal-like breast cancers, HCC1569 lacks expression of ER and progesterone receptor (PR), but it displays amplification and overexpression of the ERBB2 (HER2) oncogene, a key target for HER2-directed therapies. The cell line demonstrates a high degree of aneuploidy and harbors multiple genomic alterations relevant to breast cancer biology.

HCC1569 is included in large-scale genomic profiling efforts such as the Cancer Cell Line Encyclopedia (CCLE) and related studies that integrate mutational, copy number, methylation, and expression data. These datasets have shown that HCC1569 carries structural variants and copy number amplifications consistent with aggressive breast tumors, including those involving HER2. Functional genomic screens have highlighted the dependency of this cell line on HER2 signaling pathways, supporting its use in evaluating HER2-targeted therapies and resistance mechanisms.

Additionally, HCC1569 has been characterized for its HLA genotype and expression profile, which has implications for immunotherapy development. It is included in catalogs of HLA typing and neoantigen prediction, offering opportunities for exploring T cell epitope presentation and immune recognition in HER2-positive breast cancer contexts. This immunogenomic annotation makes HCC1569 a valuable resource not only for studying oncogenic signaling but also for evaluating tumor-immune interactions and designing personalized immunotherapies.

Organism

Human

Tissue

Breast

Disease

Breast ductal carcinoma

Synonyms

HCC-1569, Hamon Cancer Center 1569

Characteristics

Age

70 years

Gender

Female

Ethnicity

African American

Morphology

Epithelial

Cell type

Epithelial cell

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Growth properties Adherent

Regulatory Data

Citation HCC1569 (Cytion catalog number 305784)

Biosafety level 1

NCBI_TaxID 9606

CellosaurusAccession CVCL_1255

Biomolecular Data

Protein expression Estrogen receptor, negative; progesterone receptor, negative

Antigen expression Epithelial glycoprotein 2 (EGP2); cytokeratin 19

Oncogenes Her2/neu+; p53-

Mutational profile Mutation: BRCA2, Simple, p.Asn1100Thr (c.3299A>C), Heterozygous, BRCA2, Simple, p.Val1862fs*1 (c.5578delA), Heterozygous, FHIT, Simple, p.Val97Phe (c.289G>T) (651G>T), dbSNP=rs139666727, Heterozygous, Note=Germline. Mutation, PTEN, Simple, p.Lys267Argfs*9 (c.800delA) (p.Leu265fs, c.795delA), Heterozygous, TP53, Simple, p.Glu294Ter (c.880G>T), Heterozygous

Karyotype Polyploid

Handling

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

Supplements Supplement the medium with 10% FBS

Dissociation Reagent Accutase

Doubling time 45 hours

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Fluid renewal 2 to 3 times per week

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.

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% CO₂, 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.

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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.