Product sheet

HCC1428 Cells | 305782

General information

Description	HCC1428 is a human breast cancer cell line classified as luminal B based on global gene expression profiling. It originates from a primary breast tumor and retains key characteristics of luminal-type breast cancers, including expression of estrogen receptor (ER). In comparative transcriptomic analyses across breast cancer cell lines and primary tumors, HCC1428 consistently clustered with luminal B subtype tumors, which are distinguished by higher proliferation indices and a gene expression signature distinct from luminal A tumors. Functionally, HCC1428 cells exhibit intermediate levels of proliferation and differentiation relative to other breast cancer subtypes. They are estrogen-responsive and maintain a mature luminal phenotype, expressing markers associated with differentiated epithelial lineages of the mammary gland. In preclinical studies, luminal B cell lines like HCC1428 are often employed to evaluate endocrine therapies and resistance mechanisms, given their partial dependence on ER signaling combined with increased proliferative capacity compared to luminal A subtypes. HCC1428 is also part of the Cancer Cell Line Encyclopedia (CCLE), which provides integrated datasets of genetic, transcriptomic, and pharmacologic profiles. These data indicate that HCC1428 carries gene expression and copy number alterations typical of ER-positive, luminal-type breast cancers. This cell line is therefore a valuable model for studying hormone receptor-positive breast cancer, particularly in the context of luminal B-specific biology and response to targeted therapies.
Organism	Human
Tissue	Metastatic
Disease	Breast adenocarcinoma
Metastatic site	Pleural effusion
Synonyms	HCC-1428, Hamon Cancer Center 1428

Characteristics

Age	49 years
Gender	Female
Ethnicity	Caucasian
Morphology	Epithelial
Cell type	Epithelial cell

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Growth properties	Adherent, large epithelial cells with occasional vacuole formation

Regulatory Data

Citation	HCC1428 (Cytion catalog number 305782)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1252

Biomolecular Data

Antigen expression	Epithelial glycoprotein 2 [EGP2] positive; cytokeratin 19 positive; Her2-neu negative; p53 negative
Oncogenes	Her2/neu-; p53-
Mutational profile	Mutation: Gene fusion, ABCG1 + HGNC, SLC37A1, Name(s)=SLC37A1-ABCG1. Mutation, FHIT, Unexplicit, Ex4del, Homozygous
Karyotype	Polyploid

Handling

Culture Medium	DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Doubling time	88 hours
Fluid renewal	2 to 3 times per week

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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% CO_2, 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.
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.