HCC1428

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.

Tissue	Metastatic
Disease	Breast adenocarcinoma
Metastatic site	Pleural effusion

Synonyms

- HCC-1428
- Hamon Cancer Center 1428

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial
Cell type	Epithelial cell

Karyotype

Polyploid

Doubling time	88 hours

IDENTIFIERS

Citation

HCC1428 (Cytion catalog number 305782)

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

NCBI TaxID	9606
Cellosaurus	CVCL_1252

EXPRESSION AND SUSCEPTIBILITY

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

HANDLING AND CULTURE

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)

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

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase
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	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.

Disclaimer

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

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