Product sheet

ZR-75-30 Cells | 305389

General information

Description	ZR-75-30 is a human breast cancer cell line derived from a ductal carcinoma. Genomic profiling studies have shown that ZR-75-30 harbors amplification of the ERBB2/HER2 gene, a key driver in a subset of breast cancers. This amplification results in elevated HER2 protein expression, which has been linked to increased proliferation and resistance to certain therapies. Additionally, ZR-75-30 exhibits alterations in the epidermal growth factor receptor (EGFR) signaling pathway, including gains of EGFR-related genes, suggesting that the cell line may be useful in studying HER2-targeted therapies and their resistance mechanisms. Transcriptomic analyses have placed ZR-75-30 within the luminal subtype of breast cancer, supporting its relevance for studying endocrine therapy responses. The cell line has been included in studies evaluating precision medicine approaches, where molecular profiling has helped predict responses to targeted treatments. Given its molecular characteristics, ZR-75-30 is widely used as a preclinical model for evaluating hormone receptor-targeted therapies and HER2 inhibitors, making it a valuable tool in breast cancer research.
Organism	Human
Tissue	Breast, Mammary gland
Disease	Invasive breast carcinoma of no special type
Metastatic site	Ascites
Synonyms	ZR75-30, ZR7530

Characteristics

Age	47 years
Gender	Female
Ethnicity	African American
Morphology	Epithelial
Cell type	Epithelial
Growth properties	Adherent

Regulatory Data

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Citation	ZR-75-30 (Cytion catalog number 305389)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1661

Biomolecular Data

Mutational profile	Mutation: Gene fusion, APPBP2 + HGNC, PHF20L1, Name(s)=APPBP2-PHF20L1.Gene fusion, BCAS3 + HGNC, HOXB9, Name(s)=BCAS3-HOXB9. Gene fusion, COL14A1 + HGNC, SKAP1, Name(s)=COL14A1-SKAP1. Gene fusion, DDX5 + HGNC, DEPTOR, Name(s)=DDX5-DEPTOR. Gene fusion, BCAS3 + HGNC, ERBB2, Name(s)=ERBB2-BCAS3. Gene fusion, ENPP2 + HGNC, PLEC, Name(s)=PLEC-ENPP2, PLEC1-ENPP2. Gene fusion, PCGF2 + HGNC, TAOK1, Name(s)=TAOK1-PCGF2. Gene fusion, NRIP1 + HGNC, TIAM1, Name(s)=TIAM1-NRIP1. Gene fusion, ARHGAP32 + HGNC, TIMM23, Name(s)=TIMM23-ARHGAP32. Gene fusion, LASP1 + HGNC, TRPS1, Name(s)=TRPS1-LASP1. Gene fusion, CWC25 + HGNC, USP32, Name(s)=USP32-CWC25, USP32-CCDC49. Gene fusion, OPRD1 + HGNC, ZMYM4, Name(s)=ZMYM4-OPRD1. Mutation, BRAF, Simple, p.Ile326Thr (c.977T>C), Heterozygous, CDH1, Simple, p.Glu243Ter (c.727G>T), Homozygous.

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, 10 µg/ml Insulin
Doubling time	110 hours
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% 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.