

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, Note=In frame (PubMed=23260012).Gene fusion, BCAS3 + HGNC, HOXB9, Name(s)=BCAS3-HOXB9 (PubMed=23260012).Gene fusion, COL14A1 + HGNC, SKAP1, Name(s)=COL14A1-SKAP1, Note=In frame (PubMed=23260012).Gene fusion, DDX5 + HGNC, DEPTOR, Name(s)=DDX5-DEPTOR, Note=In frame (PubMed=23260012).Gene fusion, BCAS3 + HGNC, ERBB2, Name(s)=ERBB2-BCAS3, Note=Out of frame (PubMed=23260012).Gene fusion, ENPP2 + HGNC, PLEC, Name(s)=PLEC-ENPP2, PLEC1-ENPP2, Note=In frame (PubMed=23260012).Gene fusion, PCGF2 + HGNC, TAOK1, Name(s)=TAOK1-PCGF2, Note=In frame (PubMed=23260012).Gene fusion, NRIP1 + HGNC, TIAM1, Name(s)=TIAM1-NRIP1, Note=In frame (PubMed=23260012).Gene fusion, ARHGAP32 + HGNC, TIMM23, Name(s)=TIMM23-ARHGAP32, Note=Out of frame (PubMed=23260012).Gene fusion, LASP1 + HGNC, TRPS1, Name(s)=TRPS1-LASP1, Note=In frame (PubMed=23260012).Gene fusion, CWC25 + HGNC, USP32, Name(s)=USP32-CWC25, USP32-CCDC49, Note=Out of frame (PubMed=23260012).Gene fusion, OPRD1 + HGNC, ZMYM4, Name(s)=ZMYM4-OPRD1, Note=Out of frame (PubMed=23260012).Mutation, BRAF, Simple, p.Ile326Thr (c.977T>C), Heterozygous, CDH1, Simple, p.Glu243Ter (c.727G>T), Homozygous (PubMed=19593635).
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Handling

Culture Medium	RPMI
Doubling time	110 hours
Split ratio	A subcultivation ratio of 1:2 to 1:3 is recommended
Fluid renewal	2 to 3 times per week
Freeze medium	As a cryopreservation medium, 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.

Quality Control & Molecular Analysis

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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.