AU565

305313

GENERAL INFORMATION

Description

The AU565 cell line is derived from a human breast carcinoma and is classified as HER2-positive, making it a valuable model for studying HER2-targeted therapies such as trastuzumab (TZM). These cells are widely used to investigate breast cancer behaviors, particularly regarding targeted drug delivery and metastatic processes. Research utilizing AU565 cells has shown that they exhibit significant HER2 expression at the plasma membrane, facilitating studies on the binding efficiency and internalization of anti-HER2 monoclonal antibodies like TZM. AU565 cells display efficient TZM binding at the membrane with subsequent accumulation in intracellular compartments, providing insights into the endocytic and trafficking mechanisms involved in TZM uptake and retention within tumor cells. This unique behavior makes AU565 a distinctive model compared to other HER2-positive cell lines and supports its use in exploring drug efficacy and cell membrane dynamics.
AU565 cells also serve as a model for studying metastatic behavior, specifically transendothelial migration, which is a critical step in cancer metastasis. As a weakly invasive cell line, AU565's ability to migrate across endothelial cell layers is highly dependent on focal adhesion kinase (FAK) signaling, which facilitates interactions with the extracellular matrix and endothelial cells during migration. Inhibiting FAK activity in AU565 cells has been shown to reduce their migration rates, highlighting FAK's role in cell motility and suggesting its potential as a therapeutic target to limit metastatic progression. Additionally, AU565 cells exhibit responses to variations within the tumor microenvironment, such as differences in collagen density, which can impact drug delivery efficacy and resistance. These characteristics make AU565 cells a powerful model for studying HER2-targeted therapies and the influences of the tumor microenvironment on treatment outcomes.

Tissue	Breast
Disease	Adenocarcinoma
Metastatic site	Pleural effusion

Synonyms

- AU-565
- AU 565

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like

IDENTIFIERS

Citation

AU565 (Cytion catalog number 305313)

NCBI TaxID	9606
Cellosaurus	CVCL_1074

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EXPRESSION AND SUSCEPTIBILITY

Receptors expressed

Epidermal growth factor (EGF)

Oncogenes

Her2/neu+ (overexpressed), her3+, her4+, p53+

Mutational profile

Mutation: TP53, p.Arg175His (c.524G>A), homozygous

HANDLING AND CULTURE

Culture medium

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

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

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase

Subculturing

Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.

Fluid renewal	1 to 2 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	43 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.

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

PRODUCT DETAILS

Composition table