KYSE-150

305087

GENERAL INFORMATION

Description

The KYSE-150 cell line is a human esophageal squamous cell carcinoma (ESCC) model derived from a primary tumor resected from an adult patient. This cell line is part of the KYSE series, which was developed to provide a reliable in vitro model for studying the pathobiology of esophageal cancer, particularly in understanding tumorigenesis and therapeutic response. The KYSE-150 cells exhibit a rapid doubling time of 13.7 hours, indicating a high proliferative capacity, which is characteristic of aggressive cancer phenotypes. These cells grow in monolayer culture, adhering to the substrate and forming a uniform sheet, which is typical for epithelial-derived cancer cells.
Genetic analysis of KYSE-150 reveals significant alterations in key tumor suppressor genes, particularly the p16 (INK4a) gene. This cell line shows aberrations in the p16 gene, specifically in the form of CpG island methylation, which silences the gene and contributes to the loss of cell cycle regulation. This epigenetic modification is a common mechanism in many cancers and highlights the relevance of KYSE-150 for studying gene silencing and its role in cancer progression. Furthermore, the cell line retains the wild-type configuration of the p15 gene, suggesting a selective inactivation mechanism for p16 over p15 in this model, which may be of interest in comparative genomic studies.
KYSE-150 is not only valuable for studying the molecular and cellular mechanisms of ESCC but also for exploring the effects of genetic and epigenetic alterations in cancer. It provides a robust model for investigating therapeutic interventions that target the specific pathways dysregulated in esophageal squamous cell carcinoma. Given its high proliferation rate and specific genetic profile, KYSE-150 is a suitable candidate for in vitro pharmacological testing and other applications related to cancer research, but not for therapeutic or in vivo purposes.

Tissue	Esophagus
Disease	Esophageal squamous cell carcinoma

Synonyms

- KYSE 150
- KYSE150
- Kyse150
- KY150

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial
Doubling time	25 hours

IDENTIFIERS

Citation

KYSE-150 (Cytion catalog number 305087)

NCBI TaxID	9606

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Cellosaurus	CVCL_1348

HANDLING AND CULTURE

Culture medium

Please mix Ham's F12 and RPMI 1640 in a 50:50 ratio (Cytion article numbers 820600a and 820702a)

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

Supplements

Supplement the medium with 5% 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	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	Asian

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

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