KYSE-30

305094

GENERAL INFORMATION

Description

KYSE-30 is a well-differentiated human esophageal squamous cell carcinoma (ESCC) cell line derived from a primary tumor in an adult patient. As part of the KYSE series, this cell line was established to study the molecular and cellular characteristics of esophageal cancer. KYSE-30 cells are notable for their rapid proliferation, with a doubling time of 20.8 hours, making them a robust model for in vitro cancer research. These cells grow predominantly as adherent monolayers, displaying a characteristic polygonal shape and uniform appearance under phase-contrast microscopy. Their growth pattern is typical of epithelial-derived cancer cells, forming tightly packed colonies with a tendency to pile up in a disorganized manner, reflecting the invasive nature of the tumor from which they were derived.
Genetically, KYSE-30 is significant for its alterations in key tumor suppressor genes. The cell line exhibits a wild-type configuration for the p16 (INK4a) and p15 (INK4b) genes, but it carries a notable point mutation in the p16 gene that results in a premature stop codon, leading to a truncated, non-functional protein. This mutation likely contributes to the loss of cell cycle control, promoting the unchecked proliferation characteristic of cancer cells. The retention of the wild-type p15 gene, however, suggests that p16 gene alterations play a more critical role in the oncogenesis of KYSE-30, which may be relevant in studies focusing on the differential roles of these genes in cancer.
KYSE-30 is tumorigenic, as demonstrated by its ability to form tumors when injected into athymic nude mice, making it an excellent model for in vivo studies of ESCC. The histological examination of tumors formed by KYSE-30 cells shows characteristics similar to the original squamous cell carcinoma, providing a faithful representation of the disease. This cell line is invaluable for research into the mechanisms of tumorigenesis, the genetic and epigenetic changes driving esophageal cancer, and the development of targeted therapies, although it is not suitable for therapeutic or in vivo applications.

Tissue	Esophageal Squamous Epithelium
Disease	Esophageal squamous cell carcinoma

Synonyms

- Kyse-30
- KYSE 30
- KYSE30
- Kyse30
- KYSE0030

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-Like, With Long Pseudopod
Doubling time	20 to 30 hours

IDENTIFIERS

Citation

KYSE-30 (Cytion catalog number 305094)

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NCBI TaxID	9606
Cellosaurus	CVCL_1351

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 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	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	64 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