KYSE-410

305122

GENERAL INFORMATION

Description

KYSE-410 is a human esophageal squamous cell carcinoma (ESCC) cell line that was established from a primary tumor resected from an adult patient. This cell line is part of the KYSE series, which includes multiple ESCC models designed to provide a comprehensive tool for studying the various aspects of esophageal cancer. KYSE-410 cells have a doubling time of 24.2 hours, reflecting a moderate proliferative capacity. They grow as adherent monolayers, a common feature among epithelial-derived cancer cells, and exhibit a relatively uniform morphology under phase-contrast microscopy.
At the genetic level, KYSE-410 is particularly notable for its epigenetic alterations. The p16 (INK4a) gene in KYSE-410 shows hypermethylation of the 5' CpG islands, a modification that leads to the silencing of this crucial tumor suppressor gene. This epigenetic change is a significant driver of oncogenesis in many cancers, including ESCC, as it results in the loss of cell cycle regulation and unchecked cell proliferation. Despite this, KYSE-410 retains a wild-type configuration for the p15 (INK4b) gene, highlighting a selective inactivation of p16 that is typical of certain cancer subtypes.
The KYSE-410 cell line is tumorigenic, as demonstrated by its ability to induce tumor formation when implanted into athymic nude mice. The histological analysis of these tumors shows features consistent with squamous cell carcinoma, making KYSE-410 a relevant model for in vivo studies. This cell line is highly valuable for research focused on understanding the role of epigenetic modifications in cancer progression, as well as for testing the efficacy of therapies targeting epigenetic regulators, although it is not intended for therapeutic or in vivo applications.

Tissue	Esophagus
Disease	Esophageal squamous cell carcinoma

Synonyms

- KYSE 410
- KYSE410
- Kyse410
- KYSE0410

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial
Doubling time	32 to 45 hours

IDENTIFIERS

Citation

KYSE-410 (Cytion catalog number 305122)

NCBI TaxID	9606

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Cellosaurus	CVCL_1352

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.

Seeding density	1-3*10^4/cm²
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	51 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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