Product sheet

KYSE-410 Cells | 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.
Organism	Human
Tissue	Esophagus
Disease	Esophageal squamous cell carcinoma
Synonyms	KYSE 410, KYSE410, Kyse410, KYSE0410

Characteristics

Age	51 years
Gender	Male
Ethnicity	Asian
Morphology	Epithelial
Growth properties	Adherent

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Regulatory Data

Citation	KYSE-410 (Cytion catalog number 305122)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1352

Biomolecular Data

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Doubling time	32 to 45 hours
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
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.

Thawing and Culturing Cells	1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit. 2. 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. 3. 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. 4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening. 5. 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. 6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium. 7. 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. 8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
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.
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.

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.