Product sheet

Cytion

KYSE-30 Cells | 305094

Renseignements généraux

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.
Organism	Human
Tissue	Esophageal Squamous Epithelium
Disease	Esophageal squamous cell carcinoma
Synonyms	Kyse-30, KYSE 30, KYSE30, Kyse30, KYSE0030

Caractéristiques

Age	64 years
Gender	Male
Ethnicity	Asian
Morphology	Epithelial-Like, With Long Pseudopod

Growth properties	Adherent

Données réglementaires

Citation	KYSE-30 (Cytion catalog number 305094)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1351

Données biomoléculaires

Manipulation

Culture Medium	Please mix Ham's F12 and RPMI 1640 in a 50:50 ratio (Cytion article numbers 820600a and 820702a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Doubling time	20 to 30 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.

Contrôle de la qualité et analyse moléculaire

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.