

TE-1 Cells | 305060

General information

Description

The TE-1 cell line was derived from a well-differentiated squamous cell carcinoma of the esophagus. TE-1 cells are characterized by their epithelial morphology, growing as both isolated and piled-up colonies. Cytogenetic studies reveal a male karyotype and distinctive marker chromosomes.

TE-1 cells are notable for their differentiation-associated structures, such as desmosomes and interdigitated microvilli, as observed under scanning electron microscopy. These cells also exhibit abundant organelles, including mitochondria and rough endoplasmic reticulum, as seen in transmission electron microscopy. When transplanted into immunodeficient mice, TE-1 cells form tumors that closely resemble the histological features of the original tumor, making them a reliable model for esophageal squamous cell carcinoma research.

The cell line has been utilized to investigate molecular and cellular mechanisms of squamous cell carcinoma, including studies on epidermal growth factor (EGF) receptor expression and signaling. TE-1 cells demonstrate a reduced number of high-affinity EGF receptors compared to normal esophageal epithelial cells, and their response to EGF differs markedly. These features make TE-1 a valuable model for exploring the roles of growth factor signaling, tumor biology, and therapeutic resistance in esophageal squamous cell carcinoma.

Organism

Human

Tissue

Esophagus

Disease

Esophageal squamous cell carcinoma

Synonyms

TE1

Characteristics

Age

58 years

Gender

Male

Ethnicity

Asian

Morphology

Epithelial

Growth properties

Adherent

Regulatory Data

Citation

TE-1 (Cytion catalog number 305060)

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Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1759

Biomolecular Data

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO ₃ (Cytion article number 820700a)
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Supplements	Supplement the medium with 10% FBS
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Dissociation Reagent	Accutase
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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.
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Fluid renewal	2 to 3 times per week
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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.
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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 $300 \times g$ 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.