Product sheet

2427T Cells | 300167

General information

Description	Originating from a primary tumor of a 64-year-old female Caucasian patient diagnosed with lung squamous cell carcinoma, 2427T provides a valuable in vitro model that recapitulates the morphological traits of the original tumor tissue. Characterized by their distinctive small, round shape and propensity to aggregate into clusters, 2427T cells exhibit key morphological features typical of squamous cell carcinoma (SCC). A defining characteristic of the 2427T cell line is its expression of cytokeratin 5/6 (CK5/6), a marker indicative of its SCC origin. The heterogeneous expression of CK5/6 hints at the presence of diverse cell subpopulations within the 2427T culture, presenting an opportunity for further exploration of intratumoral heterogeneity. Immunophenotyping of 2427T has revealed its unique profile, including the lack of adenocarcinoma-associated marker CK7, hemato-endothelial progenitor marker CD34, and leukocyte marker CD45, reinforcing its classification within the squamous lineage. Interestingly, while the cell line generally shows negativity for neuroendocrine markers such as CD56, synaptophysin (SYP), neuron-specific enolase (NSE), and chromogranin A (CHGA), the expression of SYP in a subset of cells suggests a degree of neuroendocrine marker heterogeneity. Crucially, the 2427T cell line does not harbor mutations in EGF-R or k-ras, distinguishing it from other models and underscoring its potential as a novel resource for delving into the biology and therapeutic vulnerabilities of squamous cell non-small cell lung cancer (NSCLC). This absence of common oncogenic mutations positions 2427T as an invaluable tool for research aimed at uncovering the underlying mechanisms of squamous cell carcinoma pathogenesis and progression.
Organism	Human
Tissue	Lung
Disease	Lung squamous cell carcinoma

Characteristics

Age	64 years
Gender	Female
Ethnicity	Caucasian
Growth properties	Adherent

Regulatory Data

Citation	2427T (Cytion catalog number 300167)

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NCBI_TaxID	9606
CellosaurusAccession	CVCL_M070

Biomolecular Data

Protein expression	Synaptophysin (SYP)
Antigen expression	Partial expression of CK5/6
Tumorigenic	Highly tumorigenic in nude mice.

Handling

Culture Medium	DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)
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.
Freeze medium	As a cryopreservation medium, we use 50% basal medium + 40% FBS + 10% DMSO, 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

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.