Product sheet

T406 Cells | 300361

General information

Description	The T406 cell line is derived from a human glioblastoma multiforme (GBM), a highly aggressive brain tumor classified as WHO Grade IV. This cell line has been extensively studied for its genetic characteristics, particularly the overexpression of the erbB oncogene. Cytogenetic analysis of T406 revealed polysomy of chromosome 7, a common feature in high-grade gliomas, with up to six copies of chromosome 7 present per cell. This polysomy correlates with increased expression of the erbB oncogene, which plays a role in tumor proliferation and survival. The T406 cell line has been used to study the molecular mechanisms of glioblastoma progression and the role of growth factor receptors in tumorigenesis. T406 has also been included in studies evaluating the heterogeneity of tumor responses to chemoradiotherapy. Research has demonstrated that T406, along with other GBM cell lines, shows variability in the expression of heparanase (HPSE) and heparan sulfate (HS), which are involved in the tumor microenvironment's remodeling. This heterogeneity in expression may contribute to treatment resistance and tumor relapse, making T406 an important model for understanding the effects of therapy on tumor biology. Furthermore, T406 has been used as part of larger panels of glioblastoma models to explore tumor growth and resistance pathways, serving as a critical tool in preclinical cancer research.
Organism	Human
Tissue	Brain
Disease	Glioblastoma
Synonyms	T-406

Characteristics

Age	53 years
Gender	Male
Ethnicity	Caucasian
Morphology	Fibroblast-like
Growth properties	Adherent

Regulatory Data

Citation	T406 (Cytion catalog number 300361)

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Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_4570

Biomolecular Data

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
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.
Fluid renewal	2 times per week
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.