Product sheet

T98G Cells | 305030

Description	The T98G cell line is a human glioblastoma multiforme model derived from a 61-year-old male patient. It was established to study the molecular mechanisms of tumorigenesis, cellular proliferation, and transformation. T98G cells exhibit a unique combination of both normal and transformed cellular characteristics, which makes them a valuable model for investigating cancer biology. Specifically, while T98G cells are immortal and capable of anchorage-independent growth, they retain the ability to undergo G1 phase arrest under stationary-phase conditions, a property typically associated with normal cells. In terms of growth characteristics, T98G cells exhibit anchorage independence, as demonstrated by their ability to form colonies in methylcellulose, a semi-solid medium. However, unlike many transformed cell lines, they arrest in the G1 phase of the cell cycle when subjected to conditions of high cell density or low serum concentration. This unique ability to undergo G1 arrest under these conditions sets T98G apart from other cancer cell lines, such as HeLa or the parental T98 cells, which continue to proliferate under similar circumstances. This phenotype suggests that while T98G cells are transformed, they retain certain regulatory mechanisms that control cell cycle progression. Cytogenetically, T98G cells are highly aneuploid, with a modal chromosome number of 124-126, indicating significant chromosomal instability. The presence of marker chromosomes and minute chromosomes in their karyotype further reflects the genetic alterations commonly associated with glioblastoma multiforme. Despite their transformed and aneuploid nature, T98G cells are non-tumorigenic when injected into nude mice, demonstrating that anchorage independence alone is insufficient for tumorigenicity. The T98G cell line serves as an important tool for studying glioblastoma progression, cell cycle regulation, and the interplay between normal and transformed cellular behaviors. Its ability to retain aspects of normal G1 arrest makes it a particularly useful model for exploring mechanisms underlying cellular transformation, cell cycle checkpoints, and therapeutic targets for glioblastoma.
Organism	Human
Tissue	Brain
Disease	Glioblastoma
Synonyms	T 98 G, T-98G, T98 G, T98-G

Age	61 years
Gender	Male
Ethnicity	European
Morphology	Fibroblast

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Growth properties	Adherent

Citation	T98G (Cytion catalog number 305030)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0556

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
Dissociation Reagent	Accutase
Doubling time	40 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 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.

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.