Product sheet

GL261 Cells | 305225

General information

Description	The GL261 cell line is a murine glioma model derived from C57BL/6 mice. This cell line is widely used in neuro-oncology research due to its ability to closely mimic the aggressive and invasive characteristics of human glioblastoma multiforme (GBM). GL261 cells grow as adherent cultures and form tumors when injected intracranially into syngeneic hosts, making them an ideal model for studying glioma progression, tumor microenvironment interactions, and therapeutic responses in an immunocompetent setting. GL261 cells are known for their high proliferative capacity and expression of various glioma-associated markers, such as glial fibrillary acidic protein (GFAP) and S100. They exhibit mutations in key oncogenes and tumor suppressor genes, including p53 and PTEN, which are commonly altered in human GBM. This genetic profile, along with their robust in vivo tumorigenicity, has made GL261 a valuable tool for preclinical evaluation of anti-glioma therapies, including chemotherapy, radiotherapy, and immunotherapy approaches. Researchers also utilize GL261 cells to investigate the mechanisms of glioma invasion and resistance to treatment, contributing to the development of more effective clinical strategies.
Organism	Mouse
Tissue	Brain
Disease	Glioblastoma
Synonyms	Glioma 261, GLIOMA 261, Glioma-261, GL-261

Characteristics

Breed/Subspecies	C57BL/6
Growth properties	Adherent

Regulatory Data

Citation	GL261 (Cytion catalog number 305225)
Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_Y003

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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 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.

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.