C6

500142

GENERAL INFORMATION

Description

The C6 cell line maintains glial cell type with fibroblast morphology and originates from a glioma of a Wisthar-Furth rat. The glioma was induced by exposure to N-nitrosomethylurea, following numerous cycles of alternating culture and animal passages.
The C6 glioma cell line is frequently utilized in neuro-oncology research to create animal models that closely mimic the characteristics of human glioma, aiding in the development of new therapeutic agents and strategies. It is particularly effective in 3D cell culture and high-throughput screening.
C6 cells are genetically diverse, possessing a wild-type p53 gene, increased Rb gene expression, and a mutant p16/Cdkn2a/Ink4a locus but lacking p16 and p19ARF mRNA expression. They also overexpress several genes in human gliomas, such as PDGFβ, IGF-1, EGFR, and Erb3/Her3 precursor proteins.
However, the expression of IGF-2, FGF-9, and FGF-10 is reduced, while MMP-7 gene expression remains unchanged. Like human gliomas, C6 cells show increased activity of the Ras pathway genes, which is regulated by the elevated expression of the Ras guanine triphosphate activator protein.
The C6 cell line has been utilized in various studies. For instance, it was used to examine the ability of 2-(2,4-dihydroxy phenyl)thieno-1,3-thiazin-4-one (BChTT) to halt cancer cell proliferation and to investigate the mechanisms involved in this process.
In another research, the cytotoxic and antioxidant properties of the supercritical CO2 extract (SCE) of an old man's beard (Usnea barbata) were studied using C6 cells. Interestingly, these cells have been reported to show increased levels of glyceryl phosphate dehydrogenase activity in response to glucocorticoids.

Tissue	Brain
Disease	Glioma

Synonyms

- C-6
- C 6
- RGC-6
- RGC6
- RGc6

CLASSIFICATION

Organism	Rat
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Fibroblast-like
Cell type	Glial cells
Doubling time	24 hours

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IDENTIFIERS

Citation

C6 (Cytion catalog number 500142)

NCBI TaxID	10116
Cellosaurus	CVCL_0194

EXPRESSION AND SUSCEPTIBILITY

Receptors expressed

Glucocorticoid

Viruses

Positive for LCMV

Virus susceptibility

Vesicular stomatitis (Indiana), vaccinia, herpes simplex

Virus resistance

Poliovirus 3

Reverse transcriptase	Negative

Products

S-100 protein, production of glyceryl phosphate dehydrogenase in response to glucocorticoids, somatotrophin.

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

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.

Seeding density	1 x 10^4 cells/cm^2 will yield in a confluent layer in about 4 days
Fluid renewal	2 to 3 times per week
Post-thaw recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	Unspecified

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Disclaimer

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

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