Product sheet

C6 Cells | 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 PDGF?, 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.
Organism	Rat
Tissue	Brain
Disease	Glioma
Synonyms	C-6, C 6, RGC-6, RGC6, RGc6

Characteristics

Age	Unspecified
Gender	Male
Morphology	Fibroblast-like
Cell type	Glial cells

Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	C6 (Cytion catalog number 500142)
Biosafety level	2

Expression / Mutation

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

Culture Medium	RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	Accutase
Doubling time	24 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.
Split ratio	A ratio of 1:2 to 1:3 is recommended
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
Freezing 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.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

Handling of cryopreserved cultures

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. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours.
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.

Quality control / Genetic profile / HLA

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.

STR profile

Rat_D1Wox31: 104
Rat_D2Wox37: 156
Rat_D19Wox11: 220,228
Rat_D10Wox8: 266
Rat_D4Wox7: 145
Rat_D2Wox27: 207,215
Rat_D5Rat33: 122
Rat_D10Wox11: 156,171
Rat_D1Wox23: 214
Rat_D12Wox1: 406
Rat_D6Wox2: 104
Rat_D8Wox7: 182
Rat_D6Cebr1: 233,239
SRY: x,Y