Product sheet

LN229 Cells | 305043

General information

Description	LN229 is a human glioblastoma cell line derived from a 60-year-old White female patient with glioblastoma multiforme (GBM), specifically from the right frontal parieto-occipital cortex. Glioblastoma is one of the most aggressive and lethal forms of brain cancer, and LN229 cells are extensively used in research to understand the disease's molecular underpinnings and to develop potential therapeutic strategies. The cells display an epithelial-like morphology and exhibit adherent growth properties, which makes them ideal for in vitro studies. Given their high tumorigenic potential, they readily form tumors when injected into nude mice, making them a robust model for cancer research. One of the critical characteristics of LN229 cells is the presence of a mutated p53 gene (TP53), with a specific CCT (Pro) to CTT (Leu) mutation at codon 98. This mutation contributes significantly to the cell line's aggressive behavior and resistance to apoptosis. Additionally, LN229 cells have a wild-type PTEN gene, but they exhibit homozygous deletions in the p16 and p14ARF tumor suppressor genes, which are vital regulators of the cell cycle and apoptosis. These genetic alterations make LN229 a valuable model for studying the impact of these mutations on tumor biology and therapeutic resistance. LN229 cells are particularly useful in apoptosis studies. They undergo apoptosis upon stimulation with Fas ligand, with cell death occurring within 16 hours. Interestingly, while Bcl-2 expression can protect LN229 cells from Fas ligand-induced apoptosis, it only offers limited protection against apoptosis induced by puromycin, a protein synthesis inhibitor. This selective resistance pattern makes LN229 cells a critical model for understanding the molecular mechanisms of apoptosis in glioblastoma and for testing potential apoptosis-modulating therapies. As with all in vitro research models, LN229 cells are not suitable for therapeutic or in vivo applications.
Organism	Human
Tissue	Brain, right frontal parieto-occipital cortex
Disease	Glioblastoma
Synonyms	LN 229, LN229, LNT-229

Characteristics

Age	60 years
Gender	Female
Ethnicity	European
Morphology	Epithelial

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Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	LN229 (Cytion catalog number 305043)
Biosafety level	1

Expression / Mutation

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	Accutase
Doubling time	31 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	1:2 to 1:5
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

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.
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.