

LN18 Cells | 305822

General information

Description

LN-18 is a human malignant glioma cell line originally derived from a temporal lobe tumor of an adult male patient diagnosed with glioblastoma multiforme (Kernohan grade IV). The line was established in vitro and has been maintained for over 115 passages in monolayer culture. LN-18 cells exhibit bipolar or stellate morphologies with pleomorphic nuclei and have a doubling time of approximately 72 hours. Although early cultures and biopsy material expressed glial fibrillary acidic protein (GFAP), GFAP synthesis was not observed in later passages. However, the glial origin of the cells was confirmed via ultrastructural analysis. LN-18 cells also showed the presence of Ia-like antigens on their surface and were capable of synthesizing high levels of fibronectin, both features relevant to glioma pathology and tumor-host interactions.

In terms of tumorigenicity, LN-18 cells are capable of forming solid tumors when injected into nude mice, with the resultant tumors being transplantable and histologically similar to the original glioblastoma. Karyotypic analysis revealed the presence of three consistent marker chromosomes, providing a cytogenetic fingerprint for the cell line. Despite the lack of detectable GFAP or S-100 protein in later passages, the LN-18 line remains a valuable model for studying human glioma biology, especially in relation to cell surface antigen expression, tumorigenicity, and extracellular matrix interactions through fibronectin production. The cell line also possesses stable growth characteristics and is amenable to cryopreservation, making it suitable for long-term experimental use.

Organism

Human

Tissue

Brain, right temporal lobe

Disease

Glioblastoma

Synonyms

LN 18, LN18, LN018

Characteristics

Age

61 years

Gender

Male

Ethnicity

Caucasian

Growth properties

Adherent

Regulatory Data

Citation

LN-18 (Cytion catalog number 305822)

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Biosafety level 1**NCBI_TaxID** 9606**CellosaurusAccession** CVCL_0392**Biomolecular Data****Antigen expression** HLA A2, A9, B5, BW35, DRW3**Oncogenes** P53+ (mutated, TGT (Cys) --> TCT (Ser) mutation at codon 238); PTEN+ (wild-type); p16- (deleted); p14ARF- (deleted)**Tumorigenic** Yes; Yes, forms tumors in nude mice**Mutational profile** Mutation: Gene deletion, CDKN2A, Homozygous. Mutation, PIK3CB, Simple, p.Glu1051Lys (c.3151G>A), Homozygous, TP53, Simple, p.Cys238Ser (c.713G>C), Homozygous**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 5% FBS**Dissociation Reagent** Accutase**Doubling time** 72 hours**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.

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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% CO₂, 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

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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.