LN-18

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.

Tissue	Brain, right temporal lobe
Disease	Glioblastoma

Synonyms

- LN 18
- LN18
- LN018

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Tumourigenic	Yes; Yes, forms tumors in nude mice
Doubling time	72 hours

IDENTIFIERS

Citation

LN-18 (Cytion catalog number 305822)

NCBI TaxID	9606
Cellosaurus	CVCL_0392

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EXPRESSION AND SUSCEPTIBILITY

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)

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 AND CULTURE

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)

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

Supplements

Supplement the medium with 5% FBS

Dissociation reagent	Accutase

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	61 years
Ethnicity	Caucasian

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