L428

300200

GENERAL INFORMATION

Description

The L428 cell line is a well-established neoplastic cell line derived from the pleural effusion of a female patient diagnosed with Hodgkin's disease of the nodular sclerosing type. The establishment of this cell line has provided a valuable model for studying the cellular characteristics and molecular mechanisms underlying Hodgkin's lymphoma. L428 cells closely resemble the Reed-Sternberg (RS) and Hodgkin (H) cells, which are hallmark cells of Hodgkin's lymphoma. These cells demonstrate a unique phenotype distinct from typical B cells, T cells, and other hematopoietic cell types, contributing to ongoing debates about the exact cellular origin of RS and H cells.
The L428 cell line exhibits several distinctive characteristics, including aneuploidy and the presence of multiple structural and numerical chromosomal abnormalities, which are typical markers of its neoplastic nature. These cells lack surface or cytoplasmic immunoglobulins (Igs), despite their derivation from a lymphoid malignancy, which suggests significant differentiation from normal lymphoid cells. The absence of Epstein-Barr Virus (EBV) antigens, such as EBNA and VCA, further distinguishes L428 from other EBV-positive Hodgkin's lymphoma cell lines. The cells also lack lysozyme, peroxidase, and chloracetate esterase activity, reinforcing their distinction from myeloid cells, monocytes, or macrophages.
In terms of morphology, L428 cells exhibit a range of sizes, from small mononuclear cells to large multinucleated cells, with some cells displaying villous projections on their membranes. The cells are also notable for their large, often kidney-shaped nucleoli. Functionally, L428 cells express Ia-like antigens and T-cell receptors but are devoid of other common lymphoid and myeloid markers. This unique immunophenotype, combined with the chromosomal and morphological features, supports the classification of L428 as a model of Hodgkin's lymphoma, particularly for studying the biology of RS and H cells.
The L428 cell line has been used extensively in research to explore the pathogenesis of Hodgkin's disease and to investigate potential therapeutic targets. Its ability to proliferate in vitro and its unique properties make it a critical resource for advancing the understanding of this complex hematological malignancy.

Tissue	Pleural effusion
Disease	Hodgkin lymphoma

Synonyms

- L-428
- L 428

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Round cells
Cell type	Lymphoblast

IDENTIFIERS

Citation

L428 (Cytion catalog number 300200)

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NCBI TaxID	9606
Cellosaurus	CVCL_1361

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, 1 mM sodium pyruvate, 1% NEAA

Subculturing

Maintain cultures by periodically adding or replacing the medium. Initiate cultures with a density of 5 x 10^5 cells/ml and keep the cell concentration within the range of 3 x 10^5 to 1 x 10^6 cells/ml for optimal growth.

Seeding density	1 x 10^5 cells/ml
Fluid renewal	Every 3 days
Post-thaw recovery	Fast

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	37 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.

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