Product sheet

L-428 Cells | 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.
Organism	Human
Tissue	Pleural effusion
Disease	Hodgkin lymphoma
Synonyms	L-428, L 428

Characteristics

Age	37 years
Gender	Female
Ethnicity	Caucasian
Morphology	Round cells

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Cell type	Lymphoblast
Growth properties	Suspension

Regulatory Data

Citation	L428 (Cytion catalog number 300200)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1361

Biomolecular Data

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
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
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.

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% CO_2, humidified atmosphere.
Flask Coating	None
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

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.