Product sheet

SU-DHL-1 Cells | 305876

General information

Description	SU-DHL-1 is a human anaplastic large cell lymphoma (ALCL) cell line established from the pleural effusion of a child diagnosed with diffuse histiocytic lymphoma. It was one of the first human lymphoma lines established in continuous culture and has been rigorously characterized both phenotypically and genetically. Morphologically, SU-DHL-1 retains features of the primary tumor, including large cytoplasmic vacuoles, which are lipid-containing. Histochemical studies show activity of nonspecific esterase and acid phosphatase. Unlike lymphoblastoid cell lines, SU-DHL-1 is negative for Epstein-Barr virus nuclear antigen (EBNA) and does not express surface immunoglobulins, further distinguishing it from B-lymphocyte-derived lines. SU-DHL-1 is a hallmark model for ALK-positive ALCL due to its chromosomal translocation t(2;5)(p23;q35), which leads to the expression of the NPM1-ALK fusion protein. This fusion confers constitutive tyrosine kinase activity and plays a central role in the oncogenesis of ALK+ ALCL. The cell line is part of the LL-100 panel, a curated set of leukemia and lymphoma models for high-throughput molecular profiling. SU-DHL-1 has been extensively used in studies related to oncogenic signaling, targeted therapy development, and transcriptional regulation within ALCL, making it a key tool in the understanding and treatment of this aggressive T-cell lymphoma subtype.
Organism	Human
Tissue	Pleural effusion
Disease	Anaplastic large cell lymphoma, ALK-positive
Synonyms	SU-DHL1, SUDHL1, SUDHL-1, SuDHL-1, SuDHL 1, Stanford University-Diffuse Histiocytic Lymphoma-1

Characteristics

Age	10 years
Gender	Male
Ethnicity	Caucasian
Morphology	Lymphoblast-like
Cell type	Histiocytic cell
Growth properties	Suspension

Regulatory Data

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Citation	SU-DHL-1 (Cytion catalog number 305876)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0538

Biomolecular Data

Antigen expression	Monocyte Marker: CD163+ Lymphoid Marker: CD45- Progenitor Markers: CD10-, CD34- Activation Markers: CD30+, CD25+, CD70+, CD71+, CD80-, HLA-DR+, CD45- T-Cell Markers: CD2-, CD3-, CD4-, CD5+, CD7-, CD8- B-Cell Markers: CD19-, CD20-, CD21-, CD22- Myelomonocytic Markers: CD11b-, CD11c-, CD13-, CD14-, CD15-, CD33-
Oncogenes	C-fms (proto-oncogene); bcl-6+ (c-onc)
Mutational profile	Mutation: Gene fusion, ALK + HGNC, NPM1, Name(s)=NPM1-ALK (PubMed=7824924, PubMed=9121481, PubMed=25485619, PubMed=26657151, PubMed=29899875). Mutation, TP53, Simple, p.Arg273His (c.818G>A), Heterozygous (Cosmic-CLP=909742).

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
Dissociation Reagent	-
Doubling time	~40-50 hours
Fluid renewal	2 to 3 times per week
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% 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.