Product sheet

Nalm-6 Cells | 300297

Renseignements généraux

Description	The Nalm-6 cell line, derived from the peripheral blood of a patient with B-cell precursor acute lymphoblastic leukemia (ALL), has become a critical tool in leukemia research. The human cell line Nalm 6 encapsulates the biological characteristics of B-cell ALL, providing a unique window into the disease's genomic landscape, including genome instability and DNA repair mechanisms. The utility of Nalm-6 cells extends to studying the efficacy of available therapeutic targets and existing resistance mechanisms. The cell line's sensitivity to cytotoxic agents and its role in elucidating the homologous recombination (HDR) repair functions are of particular interest, especially concerning the HDR cells' ability to correct DNA damage. The Nalm6 cell line is a reliable model for studying the complex nature of acute leukemia. It facilitates research into the gene expression profiles involved in glycolysis, lipid and carbohydrates metabolism, and the mTORC1 pathway, highlighting the metabolic reprogramming in leukemia cells. Furthermore, the cell line's application in reverse genetics and whole transcriptome analysis aids in dissecting the intricate molecular networks driving leukemia progression and resistance. Research utilizing the Nalm-6 cell line, including studies on clonal variants like clone G5 and resistant cell lines such as those with a high HPRT mutation frequency or C9 with resistance index, provides insights into leukemia's heterogeneity. The exploration of leukemia dynamics, especially in the context of glucocorticoid resistance and MSH2 expression, underscores the potential for developing more targeted and effective treatments for ALL. In summary, the Nalm-6 cell line is a pivotal resource in leukemia research, offering profound insights into B-cell ALL through its applications in studying genomic instability, DNA repair mechanisms, therapeutic target efficacy, resistance mechanisms, and the underlying molecular pathways influencing leukemia's complex biology and heterogeneity.
Organism	Human
Tissue	Blood
Disease	Adult B acute lymphoblastic leukemia
Synonyms	NALM-6, NALM 6, Nalm 6, NALM6, Nalm6, NALM-6-M1

Caractéristiques

Age	19 years
Gender	Male
Morphology	Round cells

Nalm-6 Cells | 300297

Cell type	B cell precursor
Growth properties	Suspension

Données réglementaires

Citation	Nalm-6 (Cytion catalog number 300297)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0092

Données biomoléculaires

Reverse transcriptase	Negative

Manipulation

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
Doubling time	35 to 40 hours
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.
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.
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.

Contrôle de la qualité et analyse moléculaire

Nalm-6 Cells | 300297

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.