NOMO-1

305604

GENERAL INFORMATION

Description

The NOMO-1 cell line is derived from a 31-year-old female patient diagnosed with acute monocytic leukemia (AML-M5a). This cell line exhibits promonocytic characteristics, making it a robust model for studying monocytic leukemia and differentiation. NOMO-1 cells demonstrate responsiveness to differentiation-inducing agents such as phorbol esters (e.g., 12-o-tetradecanoyl phorbol-13-acetate or TPA), leading to their maturation into macrophage-like cells. Upon differentiation, the cells exhibit increased expression of markers like fibronectin and secretion of interleukins IL-1α and IL-1β, which are critical for immune response and inflammation pathways.
These cells also play a pivotal role in studying the coagulation and fibrinolysis systems. NOMO-1 cells secrete tissue factor (TF), plasminogen activator (PA), and plasminogen activator inhibitor (PAI), with the secretion levels modulated by differentiation inducers. TPA treatment enhances the production of TF and PA, particularly the urokinase-type PA (uPA), while also increasing PAI secretion, suggesting NOMO-1's relevance in understanding hemostasis and thrombosis mechanisms in leukemia.
Genetically, NOMO-1 cells harbor the t(9;11)(p22;q23) translocation, resulting in the MLL-AF9 fusion gene, which is a hallmark of certain AML subtypes. This translocation drives leukemogenesis by dysregulating gene expression programs associated with hematopoietic differentiation and proliferation. The presence of this translocation makes NOMO-1 a vital tool for exploring MLL-rearranged leukemias and evaluating targeted therapies.

Tissue	Bone marrow
Disease	Adult acute monocytic leukemia

Synonyms

- Nomo-1
- NOMO1

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Lymphoblast-like

IDENTIFIERS

Citation

NOMO-1 (Cytion catalog number 305604)

NCBI TaxID	9606
Cellosaurus	CVCL_1609

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

CD3 -, CD4 +, CD13 +, CD14 -, CD15 +, CD19 -, CD33 +, CD34 -, HLA-DR +

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% heat-inactivated FBS

Seeding density	0.5 - 1 x 10^6 cells/mL

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	31 years
Ethnicity	Japanese

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

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