OCI-AML2

305609

GENERAL INFORMATION

Description

OCI-AML2 is a human acute myeloid leukemia (AML) cell line derived from the peripheral blood of a patient with acute myeloblastic leukemia without maturation (FAB classification M1). This cell line is extensively used as a model for studying the biology of AML, a hematological malignancy characterized by the clonal expansion of undifferentiated myeloid precursors in the bone marrow and peripheral blood. OCI-AML2 cells provide a valuable tool for research into leukemia pathogenesis, drug screening, and the identification of molecular targets for therapeutic intervention.

OCI-AML2 cells grow in suspension and display features consistent with immature myeloid cells. These cells harbor genetic and molecular abnormalities commonly associated with AML, including mutations in oncogenes and tumor suppressor genes, as well as dysregulated signaling pathways involved in cell survival, proliferation, and differentiation. Researchers utilize this cell line to investigate the mechanisms driving leukemogenesis, including the role of transcriptional regulators and epigenetic modifiers in maintaining the undifferentiated state of leukemic blasts.

This cell line is particularly valuable in preclinical studies for evaluating the efficacy of chemotherapeutic agents, targeted therapies, and combination treatments. It is frequently used to test inhibitors of key pathways such as FLT3, MEK/ERK, and PI3K/AKT/mTOR, which are critical to AML cell survival and proliferation. Additionally, OCI-AML2 has been used in studies on drug resistance and the development of personalized medicine approaches for AML treatment. Overall, OCI-AML2 is a robust and reliable model system for advancing research into acute myeloid leukemia and for developing novel therapeutic strategies.

Tissue	Peripheral blood
Disease	myeloid leukemia

Synonyms

- OCI/AML-2
- OCIAML-2
- OCI-AML2
- OCI/AML2
- OCI AML2
- OCIAML2
- AML-2
- Ontario Cancer Institute-Acute Myeloid Leukemia-2

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Single, round to oval cells
Cell type	Epithelial cell
Doubling time	30 hours

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IDENTIFIERS

Citation

OCI-AML2 (Cytion catalog number 305609)

NCBI TaxID	9606
Cellosaurus	CVCL_1619

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

CD3 -, CD4 +, CD13 +, CD15 +, CD19 -, CD33 +, CD34 -, cyCD68 +, HLA-DR +

Mutational profile

Gene fusion: AFDN + HGNC, 7132, KMT2A, Name(s)=KMT2A-AFDN, MLL-MLLT4, MLL-AF6.

HANDLING AND CULTURE

Culture medium

Alpha MEM, w: 2.0 mM stable Glutamine, with Ribonucleosides and Deoxyribonucleosides, w: 1.0 mM Sodium pyruvate, w: 2.2g/L NaHCO3

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% heat-inactivated FBS

Seeding density	2 x 10^6 cells/ml
Fluid renewal	2 to 3 times per week

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	65 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