OCI-LY1

305846

GENERAL INFORMATION

Description

OCI-LY1 is a human diffuse large B-cell lymphoma (DLBCL) cell line derived from an adult patient. It belongs to the germinal center B-cell (GCB) subtype of DLBCL, characterized by its molecular signature that mirrors normal germinal center B cells. This classification is supported by gene expression profiling, which has shown that OCI-LY1 clusters with GCB-DLBCLs, a group typically associated with a better prognosis compared to activated B-cell (ABC) DLBCL. The cell line maintains surface expression of B-cell markers and exhibits hallmarks of DLBCL including a high proliferation rate and chromosomal abnormalities consistent with aggressive lymphoma behavior.
OCI-LY1 has been a valuable model in the study of genetic heterogeneity and oncogenic signaling in DLBCL. Genomic studies have identified recurrent mutations in this line, including alterations in genes regulating chromatin remodeling, apoptosis, and B-cell receptor signaling pathways. Notably, OCI-LY1 does not harbor constitutive NF-κB pathway activation, a feature that distinguishes it from ABC-DLBCL cell lines and aligns it with the GCB molecular subtype. This makes it particularly useful for investigating mechanisms of lymphomagenesis and drug responses that are independent of NF-κB signaling. Furthermore, it has been used in immunogenetic studies including HLA typing, which is critical for exploring tumor immunogenicity and neoantigen presentation in the context of cancer immunotherapy.
In culture, OCI-LY1 cells exhibit suspension growth and are amenable to both in vitro and in vivo experimentation, including xenograft studies. They retain clonotypic immunoglobulin rearrangements, confirming their derivation from a single B-cell clone. Their stable growth properties and genetic profile make them a reliable tool for preclinical testing of targeted therapies, particularly those aimed at epigenetic modulators, PI3K pathway inhibitors, and agents inducing DNA damage responses.

Tissue	Bone marrow
Disease	Diffuse large B-cell lymphoma

Synonyms

- OCI-L years1
- OCI-ly1
- OCI-L years-1
- OCI-Ly-1
- Oci-Ly-1
- OCI-Ly 1
- OCI-Ly01
- OCI Ly1
- Ly1
- L years1

CLASSIFICATION

Organism	Human
Sex	Male
Biosafety level	1

CHARACTERISTICS

Doubling time	50 hours

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IDENTIFIERS

Citation

OCI-LY1 (Cytion catalog number 305846)

NCBI TaxID	9606
Cellosaurus	CVCL_1879

HANDLING AND CULTURE

Culture medium

IMDM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 25 mM HEPES, w: 1.0 mM Sodium pyruvate, w: 3.024 g/L NaHCO3 (Cytion article number 820800a)

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

Supplements

Supplement the medium with 10% heat-inactivated FBS

Seeding density	0.5 to 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	44 years

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.

Disclaimer

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

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