Product sheet

OCI-LY1 Cells | 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.
Organism	Human
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

Characteristics

Age	44 years
Gender	Male
Growth properties	Supsension

Regulatory Data

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Citation	OCI-LY1 (Cytion catalog number 305846)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1879

Biomolecular Data

Handling

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)
Supplements	Supplement the medium with 10% heat-inactivated FBS
Doubling time	50 hours
Seeding density	0.5 to 2 x 10^6 cells/ml
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.
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.