OCI-LY19

305610

GENERAL INFORMATION

Description

OCI-Ly19 is a human B-cell lymphoma cell line derived from the malignant lymph node of a patient with diffuse large B-cell lymphoma (DLBCL), a common and aggressive subtype of non-Hodgkin lymphoma. This cell line serves as a valuable tool for investigating the molecular mechanisms underlying DLBCL pathogenesis, including aberrant B-cell receptor (BCR) signaling, dysregulation of transcription factors, and genetic alterations driving tumor progression. OCI-Ly19 is frequently used in studies aimed at understanding DLBCL biology and developing targeted therapeutic strategies.
OCI-Ly19 cells exhibit typical B-cell morphology and grow in suspension under standard culture conditions. The cell line is characterized by chromosomal abnormalities and genetic alterations commonly associated with DLBCL, including those affecting the MYC oncogene and BCL-2 family members. These features make OCI-Ly19 an important model for studying oncogenic signaling pathways, such as the PI3K/AKT/mTOR and NF-κB pathways, which are critical for B-cell survival and proliferation in lymphoma. In addition, OCI-Ly19 cells express surface markers characteristic of mature B cells, making them suitable for exploring antigen receptor signaling and immune evasion mechanisms in lymphoma.
OCI-Ly19 is widely used in preclinical research to evaluate the efficacy of chemotherapeutic agents, monoclonal antibodies (e.g., anti-CD20 therapies), and small-molecule inhibitors targeting key signaling pathways. The cell line is also employed in drug resistance studies, particularly in the context of understanding mechanisms of relapse in DLBCL and identifying strategies to overcome treatment resistance. Its well-characterized genomic profile and relevance to DLBCL biology make OCI-Ly19 an indispensable resource for lymphoma research and therapeutic development.

Tissue	Bone
Disease	B cell lymphoma

Synonyms

- OCI-LY19
- OCI-LY-19
- OCI-Ly 19
- OCI Ly19
- OCILY-19
- OCILY19
- OCILy19
- Ly19
- LY19

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Single, round cells

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Karyotype

Human hyperdiploid karyotype with 4% polyploidy - 48(46-52)X, -X, +6, +6, +8, t(4;8)(q3?2;q?24), del(6)(q15)x2, r(8)(??), t(14;18)(q32;q21), add(18)(q23) - carries t(14;18) effecting IGH-BCL2 juxtaposition

Doubling time	40 hours

IDENTIFIERS

Citation

OCI-LY19 (Cytion catalog number 305610)

NCBI TaxID	9606
Cellosaurus	CVCL_1878

EXPRESSION AND SUSCEPTIBILITY

Antigen expression

CD3-, CD10+, CD13-, CD19+, CD20(+), CD34(+), CD37-, CD38+, CD80-, CD138-, HLA-DR(+), sIgG+, sIgM-, cIgkappa-, sIglambda+

Mutational profile

Mutation: NRAS, p.Gln61Lys (c.181C>A), Heterozygous

Viruses

PCR: EBV -, HBV -, HCV -, HIV-1 -, HIV-2 -, HTLV-1/2 -, MLV -, SMRV -

HANDLING AND CULTURE

Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

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

Supplements

Supplement the medium with 10% FBS

Seeding density	3 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	25 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