Product sheet

MINO Cells | 305513

General information

Description	The MINO cell line is a human-derived model of mantle cell lymphoma (MCL), a rare and aggressive subtype of B-cell non-Hodgkin lymphoma. This cell line was established from a 64-year-old female patient with advanced MCL. It is characterized by overexpression of cyclin D1 due to the chromosomal translocation t(11;14)(q13;q32), a hallmark of MCL. MINO cells exhibit a CD5+CD20+CD23− immunophenotype, consistent with MCL diagnosis, and show additional genetic alterations, including hyperdiploidy and a TP53 mutation at codon 147 (valine to glycine), which may contribute to its pathogenesis. MINO cells grow as single cells or in small clumps and demonstrate features typical of MCL, such as high levels of phosphorylated retinoblastoma protein (pRB) and expression of anti-apoptotic proteins like Bcl-2 and Bcl-xL. These cells have been used to study the molecular mechanisms underlying MCL progression and resistance to therapy. In particular, studies have shown that cyclin D1 plays a role in promoting cell cycle progression and evasion of apoptosis by interacting with pro-apoptotic proteins like Bax, favoring lymphoma cell survival. The MINO cell line is a valuable tool for preclinical research, including drug testing and genetic studies. It has been employed in evaluating targeted therapies that inhibit cyclin D1 activity or disrupt pathways critical to MCL survival, such as the PI3K/Akt and Bcl-2 pathways. This cell line continues to contribute to understanding MCL biology and improving therapeutic strategies for this challenging disease.
Organism	Human
Tissue	Peripheral blood
Disease	Mantle cell lymphoma
Synonyms	Mino

Characteristics

Age	68 years
Gender	Male
Ethnicity	Caucasian
Morphology	Lymphoblast-like
Cell type	Lymphoblast
Growth properties	Suspension

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Regulatory Data

Citation	MINO (Cytion catalog number 305513)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1872

Biomolecular Data

Mutational profile	Mutation: CDKN2A, p.Glu88Lys (c.262G>A), homozygous; Mutation: NRAS, p.Gly13Asp (c.38G>A), heterozygous; Mutation: p.Val147Gly (c.440T>G), homozygous

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% heat-inactivated FBS
Seeding density	1 x 10^6 cells/mL
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.

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.