Product sheet

MOLP-8 Cells | 304082

General information

Description	The MOLP-8 cell line is a human multiple myeloma cell line that carries the chromosomal translocation t(11;14)(q13;q32) and expresses the delta/lambda type immunoglobulin. It was established from the peripheral blood of a Japanese male patient diagnosed with stage IIIA multiple myeloma, specifically the Bence-Jones delta/lambda type. MOLP-8 cells grow independently of exogenous growth factors and exhibit a typical plasma cell morphology with heterogeneous sizes and one to three nuclei. This cell line is valuable for studying multiple myeloma biology, including mechanisms related to immunoglobulin production, cell signaling pathways, and drug responses in myeloma treatment. The immunophenotype of MOLP-8 cells includes markers such as CD38, CD138, CD54, and CD56, which are typically associated with plasma cells, along with cytoplasmic delta and lambda light chains. Interestingly, although the cells are initially negative for CD28, a marker related to advanced myeloma, CD28 expression can be induced when MOLP-8 cells are co-cultured with bone marrow stromal cells. This system has been instrumental in understanding the role of cell adhesion molecules like CD29 (integrin β1) and CD106 (VCAM-1) in cellular interactions between myeloma and bone marrow stromal cells. Inhibition of adhesion was achieved by targeting these molecules, indicating the importance of the VLA-4/VCAM-1 interaction in the tumor microenvironment. MOLP-8 cells provide an excellent in vitro model for exploring the molecular mechanisms of multiple myeloma progression and therapeutic targets. The cell line has been used to study the modulation of antigens involved in tumor expansion and the effects of potential treatments. Its ability to model advanced myeloma stages, including CD28 expression and interaction with stromal components, makes it particularly useful in researching disease metastasis and resistance to conventional therapies. fi
Organism	Human
Tissue	Bone marrow
Disease	Multiple myeloma
Metastatic site	Peripheral blood
Synonyms	MOLP8

Characteristics

Age	52 years
Gender	Male
Ethnicity	Japanese

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Growth properties	Suspension

Regulatory Data

Citation	MOLP-8 (Cytion catalog number 304082)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_2124

Biomolecular Data

MSI-status	Stable (MSS)

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 heat-inactivated 20% FBS, add 2.5 g/L glucose and 10 mM HEPES
Doubling time	40 hours
Subculturing	To maintain proper proliferation, the clusters must be well separated daily by pipetting. Resuspend cell suspension in the flask and take representative aliquote to count the cell number per ml. Dilute cell suspension to 1 x 10^5 cells/ml with fresh medium and transfer into new flasks.
Seeding density	5 x 10^5 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.

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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.