AMO-1

305525

GENERAL INFORMATION

Description

The AMO-1 cell line is a multiple myeloma model derived from a malignant plasma cell neoplasm. It is extensively used in research exploring mechanisms of drug sensitivity, apoptosis, and tumor cell signaling in myeloma. AMO-1 cells are sensitive to various chemotherapeutic agents and targeted treatments, such as proteasome inhibitors and tyrosine kinase inhibitors, which have become crucial in multiple myeloma therapy. Studies have demonstrated that treatment with spleen tyrosine kinase (Syk) inhibitors induces significant anti-proliferative and pro-apoptotic effects in AMO-1 cells. This action occurs through inhibition of critical signaling pathways, including MAPK and NF-kappaB, and is characterized by increased cytochrome c release and activation of apoptotic markers like caspase-3 and PARP-1. Additionally, Syk inhibition reduces cell migration and interaction with bone marrow stromal components, further limiting myeloma cell survival.
AMO-1 cells have also shown susceptibility to natural compounds targeting the Notch3-p53 axis, such as sophocarpine derivatives. These compounds reduce cell viability by downregulating anti-apoptotic proteins (e.g., Bcl-2) and upregulating pro-apoptotic factors (e.g., Bax and cleaved caspase-3). Moreover, sophocarpine treatment decreases Notch3 expression, a pathway linked to tumor progression in myeloma and other cancers. This makes AMO-1 an effective model for testing drugs aimed at modifying Notch signaling and the apoptotic pathways mediated by p53. In immunotherapy contexts, AMO-1 cells are recognized by γδ T cells through the expression of intercellular adhesion molecule-1 (ICAM-1), and transfection to increase ICAM-1 expression enhances their susceptibility to T cell-mediated lysis. This characteristic supports studies into myeloma-targeted immunotherapies as an alternative approach to treatment-resistant cases.

Tissue	Ascites
Disease	Multiple myeloma

Synonyms

- AMo1
- AMO1

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Round cells

IDENTIFIERS

Citation

AMO-1 (Cytion catalog number 305525)

NCBI TaxID	9606
Cellosaurus	CVCL_1806

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EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Gene fusion: IGKV1-8-IGKJ1; Gene fusion: IGKV3-20-IGKJ2; Mutation: BCOR, p.Gln312del (c.932_934AGC[1]) (c.935_937delAGC), heterozygous; Mutation: KRAS, p.Ala146Thr (c.436G>A), heterozygous; Mutation: STAT3, p.Cys712Tyr (c.2135G>A), heterozygous; Mutation: TET2, p.Gln1699Ter (c.5095C>T), heterozygous

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

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

Supplements

Supplement the medium with 20% heat-inactivated FBS

Subculturing

Gather the suspension cells in a 15 ml tube and gently wash the adherent cells with PBS lacking calcium and magnesium (use 3-5 ml for T25 flasks and 5-10 ml for T75 flasks). Apply Accutase (1-2 ml for T25 flasks, 2.5 ml for T75 flasks) ensuring full coverage of the cell layer. Allow the cells to incubate at room temperature for 10 minutes. Following incubation, combine and centrifuge both the suspension and adherent cells. After centrifugation, carefully resuspend the cell pellet and transfer the cell suspension into new flasks containing fresh medium.

Seeding density	8.0 x 10^5 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	64 years
Ethnicity	Japanese

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

PRODUCT DETAILS

Composition table