MM.1S

305304

GENERAL INFORMATION

Description

The MM.1S cell line is part of the MM.1 series, which was developed from a single patient with multiple myeloma (MM) to study various stages of disease progression and response to glucocorticoid (GC) therapy. MM.1S is specifically sensitive to glucocorticoids, such as dexamethasone, and serves as a model to investigate the mechanisms of GC-induced apoptosis in multiple myeloma cells. This sensitivity makes MM.1S a crucial tool for studying the early phases of MM treatment and the cellular pathways leading to GC responsiveness.
MM.1S cells, like other MM.1 lines, exhibit typical myeloma morphology, including round cells with eccentrically located nuclei, many of which are binucleated or multinucleated. These cells express characteristic markers of plasma cells, such as CD38 and PCA-1, while lacking typical B-cell markers like CD19 and CD20, reflecting their terminally differentiated status as plasma cells. They also exhibit high levels of immunoglobulin lambda (λ) light chain expression, consistent with their origin. This cell line has been vital for exploring pathways of drug action, resistance, and apoptosis in MM, especially in the context of GC treatment.
One of the key features of MM.1S is its reliance on functional glucocorticoid receptors (GR) for drug responsiveness. In MM.1S, high levels of wild-type GR enable dexamethasone to induce apoptosis effectively, providing a valuable system for studying the molecular events underlying this process. This line is often compared to its resistant counterpart, MM.1R, to investigate the mechanisms of GC resistance, a critical issue in the treatment of MM. Together, the MM.1S cell line offers insights into drug sensitivity, disease progression, and potential therapeutic strategies for multiple myeloma.

Tissue	Peripheral blood
Disease	Multiple myeloma

Synonyms

- MM1.S
- MM1-S
- MM-1S
- MM1S

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent and suspension
Biosafety level	1

CHARACTERISTICS

Morphology	Lymphoblast
Cell type	B cell

IDENTIFIERS

Citation

MM.1S (Cytion catalog number 305304)

NCBI TaxID	9606

Cellosaurus	CVCL_8792

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Mutation: KRAS, p.Gly12Ala (c.35G>C), heterozygous; Mutation: TRAF3, p.Val536_Asn545delValPheValAlaGlnThrValLeuGluAsninsAsp (c.1604-1630delTCTTTGTGGCCCAAACTGTTCTAGAAA), homozygous

Products

IgA lambda

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 10% heat-inactivated FBS

Dissociation reagent	Accutase

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.

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	45 years
Ethnicity	African American

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