Product sheet

MM.1S Cells | 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.
Organism	Human
Tissue	Peripheral blood
Disease	Multiple myeloma
Synonyms	MM1.S, MM1-S, MM-1S, MM1S

Characteristics

Age	45 years
Gender	Female
Ethnicity	African American
Morphology	Lymphoblast
Cell type	B cell

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Growth properties	Mixed: loosely attached monolayer and suspension

Regulatory Data

Citation	MM.1S (Cytion catalog number 305304)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_8792

Biomolecular Data

Products	IgA lambda
Mutational profile	Mutation: KRAS, p.Gly12Ala (c.35G>C), heterozygous; Mutation: TRAF3, p.Val536_Asn545delValPheValAlaGlnThrValLeuGluAsninsAsp (c.1604-1630delTCTTTGTGGCCCAAACTGTTCTAGAAA), 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
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.
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.