

MM.1S-Luc cells | 305829**General information****Description**

MM.1S-Luc is a genetically modified derivative of the human multiple myeloma cell line MM.1S. This engineered variant stably expresses firefly luciferase (Luc), making it suitable for in vivo bioluminescent imaging and preclinical screening applications. The parental MM.1S line, derived from a patient with multiple myeloma, is characterized by its sensitivity to glucocorticoids and is commonly used in preclinical research focused on hematologic malignancies, particularly those involving plasma cell dyscrasias.

The incorporation of luciferase enables non-invasive bioluminescent imaging, allowing researchers to monitor tumor burden and progression dynamically in live animal models. This is particularly advantageous in xenograft studies, where MM.1S-Luc can be used to evaluate therapeutic efficacy, tumor engraftment kinetics, and metastasis, providing a platform for quantifying tumor cells under varying experimental conditions.

Organism

Human

Tissue

Peripheral blood

Disease

Plasma cell myeloma

Synonyms

Luciferase Reporter MM.1S Cell Line

Characteristics**Age**

45 years

Gender

Female

Ethnicity

African American

Growth properties

Adherent/Suspension

Regulatory Data**Citation**

MM.1S-Luc (Cytion catalog number 305829)

Biosafety level

1

NCBI_TaxID

9606

CellosaurusAccession

CVCL_E3I2

MM.1S-Luc cells | 305829**GMO Status**

GMO-S1: This cell line contains a stably integrated firefly luciferase reporter cassette (Luc2, codon-optimized) introduced via replication-incompetent lentiviral transduction. The resulting polyclonal cell population was maintained under puromycin selection (1–5 µg/mL). S1 containment is required. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data**Antigen expression**

Luc2 (firefly, codon-optimized)

Mutational profile

Mutation: KRAS, Simple, p.Gly12Ala (c.35G>C), Heterozygous (from parent cell line). Mutation, TRAF3, Simple, p.Val536_Asn545delValPheValAlaGlnThrValLeuGluAsninsAsp (c.1604-1630delTCTTTGTGGCCCAACTGTTCTAGAAA), Homozygous (from parent cell line).

Handling**Culture Medium**

Ham's F12K Medium, w: 2.0 mM L-Glutamine, w: 2.0 mM Sodium pyruvate, w: 2.5 g/L NaHCO₃ (Cytion article number 820608a)

Supplements

Supplement the medium with 10% FBS

Dissociation Reagent

Accutase

Seeding density

3-5*10⁵/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% CO₂, 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

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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.