Product sheet

M-MSV-Balb/3T3 Cells | 400458

General information

Description	The M-MSV-Balb/3T3 cell line is a mouse fibroblast cell line derived from BALB/c mice. These cells are widely used in research due to their stable growth characteristics and well-characterized genetic background. They originate from the 3T3 cell line, which is a standard fibroblast cell line established from mouse embryonic tissue. The M-MSV-Balb/3T3 cells have been transformed by the Moloney Murine Sarcoma Virus (M-MSV), making them a valuable tool for studying viral oncogenesis, signal transduction pathways, and the molecular mechanisms underlying cellular transformation and tumorigenesis. The transformation by M-MSV endows these cells with a range of oncogenic properties, including increased proliferation rates, loss of contact inhibition, and the ability to form colonies in soft agar, which are hallmarks of malignant transformation. These features make M-MSV-Balb/3T3 cells particularly useful for in vitro studies on cancer biology, including the identification of oncogenes and tumor suppressor genes, as well as the testing of potential anticancer therapies. Additionally, their use in transfection experiments allows for the exploration of gene function and regulation in the context of a transformed phenotype.
Organism	Mouse
Tissue	Embryonic
Synonyms	M-MSV-BALB/3T3

Characteristics

Breed/Subspecies	BALB/c
Age	Embryo, 14 to 17 day gestation
Gender	Female
Morphology	Fibroblast-like
Cell type	Fibroblast
Growth properties	Adherent

Regulatory Data

Citation	M-MSV-Balb/3T3 (Cytion catalog number 400458)
Biosafety level	1

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NCBI_TaxID	10090
CellosaurusAccession	CVCL_5793
GMO Status	GMO-S1: This murine fibroblast cell line (M-MSV-Balb/3T3) contains Moloney murine sarcoma virus (MOMSV) sequences introduced via transfection, without production of infectious virus, supporting transformed growth. The viral sequences are stably present in Balb/3T3-derived cells. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data

Antigen expression	H-2d
Tumorigenic	Yes
Viruses	Ectromelia virus (mousepox): negative.
Reverse transcriptase	Negative

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
Seeding density	0.7 to 1 x 10^6 cells/cm^2
Fluid renewal	2 to 3 times per week

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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.
Flask Coating	None
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.