Product sheet

M2-10B4 Cells | 400428

General information

Description	The M2-10B4 cell line is a clone derived from bone marrow stromal cells from a (C57BL/6J X C3H/HeJ)F1 mouse. These stromal cells are essential components of the bone marrow microenvironment and play a significant role in supporting hematopoiesis. The M2-10B4 cells are particularly valuable for research focused on the interactions between stromal and hematopoietic cells, as they can support both human and murine myelopoiesis in long-term culture. Additionally, these cells can sustain certain murine stromal cell-dependent pre-B cell lines in vitro, making them a versatile tool in hematopoietic research. The M2-10B4 cells express important extracellular matrix components such as laminin and collagen IV, which contribute to their ability to support hematopoietic cells. However, they do not express collagen I or Factor VIII, which distinguishes them from other stromal cell lines. The presence of laminin and collagen IV is critical for the maintenance of the bone marrow microenvironment, influencing cell adhesion, differentiation, and signaling pathways. Researchers often utilize the M2-10B4 cell line in co-culture systems to explore the effects of stromal cells on the behavior of hematopoietic progenitors, particularly in the context of bone marrow physiology and disease models. Given their origin and functional properties, M2-10B4 cells are an essential model for studying the bone marrow niche, especially in relation to hematological disorders such as leukemia. They are also useful in drug screening and the development of therapeutic strategies targeting the bone marrow microenvironment.
Organism	Mouse
Tissue	Bone marrow
Synonyms	M210B4

Characteristics

Breed/Subspecies	C57BL/6J x C3H/HeJ
Age	Unspecified
Gender	Female
Morphology	Fibroblast-like
Cell type	Fibroblast
Growth properties	Adherent

Regulatory Data

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Citation	M2-10B4 (Cytion catalog number 400428)
Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_5794

Biomolecular Data

Products	Laminin, collagen IV (Collagen I(-), Factor VIII(-).

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% 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	1×10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	Viability may be low after thawing.
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% 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.