Product sheet

DS19 Cells | 305153

General information

Description	The DS19 cell line, often referred to as MEL DS19, represents an immortalized tumor cell line originating from murine erythroleukemia. This cell line was induced by the Friend virus complex (FVA virus), and it characteristically exhibits properties akin to those of proerythrocytes in their differentiation stage. DS19 cells are particularly noted for their utility in research focused on the molecular and cellular mechanisms underlying erythropoiesis and leukemogenesis. One of the defining features of the DS19 cell line is its responsiveness to certain chemical agents such as dimethyl sulfoxide (DMSO) and hemin, which are known to induce differentiation in these cells. When treated with these agents, DS19 cells transition from a leukemic to a more normalized erythroid phenotype, mimicking stages of natural erythroid differentiation. This capacity for induced differentiation makes the DS19 cell line a valuable model for studying the regulation of erythroid differentiation, especially in contexts where this process is disrupted by leukemic transformation.
Organism	Mouse
Disease	Mouse erythroid leukemia
Synonyms	MEL-DS19, MEL DS19, MELDS19, 745/DS19, MELC DS19, MEL-745A cl. DS19, MEL

Characteristics

Breed/Subspecies	DBA/2
Morphology	Lymphoblast
Growth properties	Suspension

Regulatory Data

Citation	DS19 (Cytion catalog number 305153)
Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_2111

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GMO Status	GMO-S1: This murine erythroid leukemia cell line (MEL-745A cl. DS19) contains Friend Murine Leukemia Virus-associated sequences characteristic of the transformed parental line, stably present without active viral release. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data

Viruses	Transformant: Friend murine leukemia virus (FrMLV)

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
Subculturing	Gently homogenize the cell suspension in the flask by pipetting up and down, then take a representative sample to determine the cell density per ml. Dilute the suspension to achieve a cell concentration of 1 x 10^5 cells/ml with fresh culture medium, and aliquot the adjusted suspension into new flasks for further cultivation.
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.