Product sheet

LM/TK(LMTK-) Cells | 305176

General information

Description	The LM/TK- (LMTK-) cell line is derived from murine fibroblasts and is characterized by the lack of thymidine kinase (TK) activity. This cell line is particularly useful in genetic and molecular biology research, where it serves as a model system for studying gene function, DNA replication, and recombination. The absence of TK in these cells allows for the selection of mutants or recombinant cells that have regained TK activity, making them valuable in studies involving TK-deficient mutants and for the selection of TK-positive clones following transfection with exogenous DNA. This cell line, derived from a sub-line of the L-M mouse fibroblast cell line which is resistant to BUdR, is potentially used for genetic and biochemical studies such as gene transfer and somatic cell hybridization. LM/TK- cells are commonly employed in research involving the herpes simplex virus (HSV) thymidine kinase gene, as they provide a crucial background for the selection of HSV-TK gene transformants. This has significant implications in gene therapy research, where HSV-TK is used in suicide gene therapy strategies to selectively kill cancer cells. Furthermore, these cells are utilized in the production of recombinant viruses and in the analysis of viral gene expression and replication. The LMTK- cell line thus plays a critical role in advancing our understanding of genetic manipulation and the development of therapeutic strategies.
Organism	Mouse
Tissue	Subcutaneous Connective Tissue, Mammary Areola And Fat
Synonyms	L-M[TK-], LM TK negative, L-M (TK-), L M (TK-), LM(TK-), LM(tk-), LM-TK-, LMTK-, L cells (TK-), L(TK-), L(tk-)

Characteristics

Age	100 days old
Gender	Male
Morphology	Fibroblast-Like
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	LM/TK(LMTK-) (Cytion catalog number 305176)
Biosafety level	1

Expression / Mutation

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Antigen expression	H-2k
Tumorigenic	Yes, in nude mice (Tumors developed within 21 days at 100% frequency (5/5) in nude mice inoculated subcutaneously with 1?10^7 cells).

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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.
Split ratio	1: 3 to 1: 4
Fluid renewal	2 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

Handling of cryopreserved cultures

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.

Quality control / Genetic profile / HLA

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.