Product sheet

MLTC-1 Cells | 305175

General information

Description	The MLTC-1 cell line, derived from murine Leydig tumor cells, retains the hormonal responsiveness of the original tumor. This cell line is particularly valuable for research into steroidogenesis and Leydig cell function. MLTC-1 cells exhibit key characteristics of Leydig cells, including the presence of luteinizing hormone (LH) receptors, which are crucial for the stimulation of testosterone production. These cells serve as a robust model for investigating the synthesis and secretion of steroid hormones, especially testosterone, which plays a significant role in male reproductive physiology. MLTC-1 cells respond to hormonal treatments in a manner similar to the original tumor cells. The activity of membrane adenyl cyclase is notably stimulated by treatments with human chorionic gonadotropin (hCG), luteinizing hormone, cholera toxin, sodium fluoride, and guanyl-5'-ylimidodiphosphate. Moreover, these cells produce progesterone in response to hCG, further underscoring their utility in studying hormonal regulation and signaling pathways. The MLTC-1 cell line is also employed in toxicological studies to assess the impact of various substances on Leydig cell function and steroidogenesis, making it an essential tool in reproductive biology and endocrinology research.
Organism	Mouse
Tissue	Testis
Disease	Mouse Leydig cell tumor
Synonyms	mLTC-1, Murine Leydig Tumor Cell line-1

Characteristics

Gender	Male
Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	MLTC-1 (Cytion catalog number 305175)
Biosafety level	1

Expression / Mutation

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Receptors expressed	hcG, luteinizing hormone(LH)
Protein expression	Progesterone
Tumorigenic	Yes

Handling

Culture Medium	RPMI 1640, w: 4.5 g/L Glucose, w: 2 mM L-Glutamine, w: 10 mM HEPES, w: 1 mM Sodium pyruvate, w: 1.5 g/L NaHCO3 (Cytion article number 820702a)
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	1:2 to 1:4
Fluid renewal	2 to 3 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.