CMT-93

305761

GENERAL INFORMATION

Description

The CMT93 cell line is a murine colorectal carcinoma model established from a chemically induced rectal tumor in a C57BL/ICRF mouse. The tumor originated following exposure to methylazoxymethanol acetate (MAM acetate), a potent carcinogen. CMT93 was derived from the fourth in vivo transplant generation of the original tumor and cultured using selective trypsinization techniques to isolate epithelial populations while removing mesenchymal contaminants. Through repeated subculturing and purification, the resulting cell line exhibited a stable epithelial morphology and growth pattern.
In vitro, CMT93 cells grow in coherent epithelial clumps and exhibit hallmark features of differentiated intestinal epithelial cells. Electron microscopy revealed the presence of microvilli with glycoprotein strands, desmosomal junctions, and occasional acinus-like structures, suggesting partial retention of normal rectal epithelial architecture. These cells are highly adherent and grow to confluence in approximately 7 days following a 1:2 split. While predominantly epithelial, early passages included mixed populations, which were resolved through sequential selective subculturing. The line has been maintained for numerous passages and cryopreserved successfully for long-term use.
CMT93 is widely used in gastrointestinal cancer research, particularly in studies exploring colorectal carcinogenesis, epithelial-mesenchymal interactions, immune responses, and microbial-host interactions. It is also featured in short tandem repeat (STR) profiling studies to support intraspecies authentication of mouse cell lines, confirming its unique identity and value as a validated model in preclinical research.

Tissue	Rectum
Disease	Mouse rectum carcinoma

Synonyms

- CMT-93
- CMT 93
- C57 Mouse Tumor 93

CLASSIFICATION

Organism	Mouse
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Cell type	Epithelial

IDENTIFIERS

Citation

CMT-93 (Cytion catalog number 305761)

NCBI TaxID	10090
Cellosaurus	CVCL_1986

HANDLING AND CULTURE

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)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase
Seeding density	1 to 3 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit. 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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Breed / subspecies	C57BL/icrf
Donor age	1 year 7 months

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Disclaimer

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

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