Product sheet

CMT-93 Cells | 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.
Organism	Mouse
Tissue	Rectum
Disease	Mouse rectum carcinoma
Synonyms	CMT-93, CMT 93, C57 Mouse Tumor 93

Characteristics

Breed/Subspecies	C57BL/icrf
Age	1 year 7 months
Gender	Male
Cell type	Epithelial
Growth properties	Adherent

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Regulatory Data

Citation	CMT-93 (Cytion catalog number 305761)
Biosafety level	1
NCBI_TaxID	10090
CellosaurusAccession	CVCL_1986

Biomolecular Data

Handling

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)
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
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.