Product sheet

DLD-1 Cells | 300220

General information

Description	DLD-1 is a human colorectal adenocarcinoma cell line derived from the distal colon of an adult patient. These cells are epithelial in morphology and were initially established to study colorectal cancer mechanisms and pathology. DLD-1 cells are commonly used in oncology research, particularly in studies focusing on the molecular biology of cancer, gene expression, and the effects of various chemotherapeutic agents. This cell line is known for its heterozygous KRAS mutation at codon 13, which is a common feature in colorectal cancers, implicating it in cancer cell survival and proliferation. Additionally, DLD-1 exhibits mutations in the APC gene, contributing to the deregulation of the Wnt signaling pathway, a critical element in colorectal carcinogenesis. The robust use of DLD-1 in research provides valuable insights into tumor behavior, drug response, and cancer genetics, making it a vital model in colorectal cancer research and therapeutic development.
Organism	Human
Tissue	Colon
Disease	Adenocarcinoma
Synonyms	DLD 1, DLD1, CoCL3

Characteristics

Age	67 years
Gender	Male
Morphology	Epithelial-like
Growth properties	Adherent

Regulatory Data

Citation	DLD-1 (Cytion catalog number 300220)
Biosafety level	1
NCBI_TaxID	9606

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CellosaurusAccession	CVCL_0248

Biomolecular Data

Protein expression	Keratin
Tumorigenic	In nude mice
Viruses	Reverse Transcriptase negative
Products	Carcinoembryonic antigen (CEA) 0.5 ng/10 exp6 cells/10 days, alkaline phosphatase
Karyotype	2n = 46

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
Dissociation Reagent	Accutase
Doubling time	15 hours
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.
Seeding density	1 to 2 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.

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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

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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.