Product sheet

Cytion

CC531 Cells | 500387

General information

Description	CC531 is a well-characterized rat adenocarcinoma cell line derived from the colon. It was originally established from a chemically induced colon tumor in a Wistar rat using 1,2-dimethylhydrazine (DMH), a potent carcinogen. The CC531 cell line is commonly utilized as a model system to study colorectal cancer mechanisms and the tumor microenvironment in vivo, particularly within the context of metastasis and immune responses. These cells are immunogenic and are often used in syngeneic rat models to investigate the efficacy of cancer immunotherapies and the interaction between cancer cells and the immune system. In research settings, CC531 cells are employed to examine the biological processes of colorectal cancer progression, including cell proliferation, apoptosis, and metastatic behavior. The cell line has been instrumental in studying the response of colorectal cancer to various chemotherapeutic agents and radiation therapy, providing insights into the mechanisms of resistance and sensitivity to cancer treatments. Moreover, the CC531 model serves as a valuable tool for the development and optimization of novel therapeutic strategies targeting colorectal cancer, making it crucial for translational cancer research.
Organism	Rat
Tissue	Colon
Disease	Adenocarcinoma
Synonyms	CC-531

Characteristics

Breed/Subspecies	WAG rats
Growth properties	Adherent

Regulatory Data

Citation	CC531 (Cytion catalog number 500387)
Biosafety level	1
NCBI_TaxID	10116
CellosaurusAccession	CVCL_0206

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Biomolecular Data

Tumorigenic	Yes, in nude mice, syngeneic WAG-Rij rats

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, 20 mM HEPES
Dissociation Reagent	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.
Seeding density	1 to 2 x 10^4 cells/cm^2 will result in a confluent monolayer within 3 to 4 days.
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 48 hours.
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.