Product sheet

RKO-E6 Cells | 305135

General information

Description	RKO-E6 cells are a human colorectal carcinoma cell line derived from the RKO cell line through additional mutagenesis. These cells are commonly used in cancer research, particularly focusing on colorectal cancer. The E6 variant of the RKO line offers a distinct profile that is useful for examining the effects of specific genetic manipulations and studying the molecular mechanisms of tumorigenesis and metastasis in colorectal cancer. RKO-E6 cells are characterized by several unique features, including alterations in genes related to cell cycle regulation, apoptosis, and DNA repair pathways. These modifications enhance the cell line's utility for investigating the biological effects of gene silencing or overexpression within a colorectal cancer context. For example, RKO-E6 cells have been employed to study the impact of tumor suppressor genes and oncogenes on cancer cell behavior, including proliferation, invasion, and resistance to chemotherapeutic agents. Furthermore, RKO-E6 cells are useful in studies aimed at understanding the cellular responses to environmental stressors, such as oxidative stress and DNA-damaging agents, which are relevant to the pathogenesis and progression of colorectal cancer. Their robust growth characteristics and genetic stability make them a valuable model for high-throughput screening assays to evaluate the efficacy of new anticancer compounds. In summary, RKO-E6 cells provide a critical model for advancing our knowledge of colorectal cancer biology and for developing and testing novel therapeutic strategies targeted at this prevalent and often deadly disease.
Organism	Human
Tissue	Colon
Disease	Colon carcinoma
Synonyms	RKOE6

Characteristics

Morphology	Epithelial
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	RKO-E6 (Cytion catalog number 305135)
Biosafety level	2

Expression / Mutation

Handling

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Culture Medium	EMEM, w: 2 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: EBSS, w: 1 mM Sodium pyruvate, w: NEAA (Cytion article number 820100c)
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.