Product sheet

RenCa Cells | 400321

General information

Description	RenCa (Renal Carcinoma) cells are a murine renal adenocarcinoma cell line. They are derived from a tumor spontaneously developed in the kidney of a BALB/c mouse, a common inbred strain used in research. RenCa cells are used extensively to study renal cancer biology, tumor immunology, and cancer therapy, including the efficacy of immunotherapeutic agents. The cells are known for their aggressive tumor formation when implanted in syngeneic mice, making them a valuable model for in vivo experiments that aim to mimic cancer progression and metastasis in a controlled laboratory environment. RenCa cells are characterized by a high mitotic index and are able to grow in an anchorage-independent manner, forming colonies in soft agar, which is a hallmark of oncogenic transformation. They display a fibroblast-like morphology and due to their origin in a BALB/c mouse, RenCa cells are particularly useful for research using immunocompetent mice, facilitating studies on the interaction between cancer cells and the immune system. This cell line has been utilized in numerous studies investigating the role of specific immune cells and molecules in tumor growth suppression and the potential for therapeutic intervention. In addition to their use in immunotherapy research, RenCa cells have also served as a tool in the study of cancer metastasis mechanisms, particularly in the context of the renal system. They have been employed to assess the impact of various genes and proteins on tumor invasiveness and metastatic potential, offering insights into the pathways that might be targeted to inhibit cancer spread in renal carcinoma. These features make RenCa a crucial model in both fundamental and translational cancer research.
Organism	Mouse
Tissue	Kidney
Disease	Carcinoma
Synonyms	Renca, RENCA, Renal Carcinoma

Characteristics

Age	6 weeks
Gender	Male
Morphology	Epithelial-like
Growth properties	Adherent

Identifiers / Biosafety / Citation

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Citation	RenCa (Cytion catalog number 400321)
Biosafety level	1

Expression / Mutation

Tumorigenic	Yes, in syngeneic mice
Virus susceptibility	MAP testing negative (Sendai, Ektromelie, Polyoma, K-Virus, Kilham, LCM, M.pulmonis, MVM, Theiler`s GD VII, toolan`s H-1, MHV, RCV/SDA, M-Adenovirus)

Handling

Culture Medium	RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	Accutase
Doubling time	47 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.
Split ratio	A ratio of 1:4 to 1:8 is recommended
Seeding density	2 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Freezing recovery	Fast. Viability 93%. Allow cells to recover from the freezing process for 24 to 48 hours.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

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. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours.
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.

STR profile

Amelogenin: x,y
M_18-3: 18,20,21,22
M_4-2: 21.3
M_6-7: 12
M_3-2: 14,15
M_19-2: 13,14
M_7-1: 23.2,25.2
M_1-1: 15,16,17,18
M_8-1: 13
M_2-1: 15,16,17
M_15-3: 22.3,23.3
M_6-4: 18,19
M_11-2: 17,18
M_1-2: 16,18,19
M_17-2: 15,17
M_12-1: 16,17
M_5-5: 14,15,16
M_X-1: 25
M_13-1: 16.2
Human D4/D8: -