Product sheet

ACHN Cells | 300117

Renseignements généraux

Description	The ACHN cell line is derived from the malignant pleural effusion of a 22-year-old Caucasian male with widely metastatic renal adenocarcinoma. The cell line was established in November 1979, following direct seeding of the cancer cells into culture flasks containing Eagle's MEM with 10% FBS. Over a period of 150 days, the cells were maintained and passaged in vitro. Subsequently, the cells were inoculated subcutaneously into nude mice, where they formed palpable, locally invasive tumors within four weeks. This cell line is tumorigenic, as evidenced by its ability to induce tumors in 100% of nude mice (5/5) inoculated with 10^7 cells, with tumors developing within 21 days. ACHN cells are characterized by an adherent growth pattern and express specific isoenzymes, including G6PD (type B). This cell line is also noted for its response to human interferons and interferon inducers, making it particularly useful for antiproliferative studies. Both the original ACHN cells and those recovered from tumors in nude mice demonstrate growth inhibition in the presence of human interferons, highlighting their potential application in studies exploring the efficacy of interferon-based therapies for renal cancer. The ACHN cell line is a valuable tool for cancer research, especially in the context of renal adenocarcinoma. It serves as an important model for studying tumorigenicity, metastatic behavior, and the effects of interferons on cancer cell proliferation. Its ability to form tumors in vivo and respond to interferon treatment provides a robust platform for developing and testing new therapeutic approaches targeting renal cell carcinoma.
Organism	Human
Tissue	Kidney
Disease	Adenocarcinoma

Caractéristiques

Age	22 years
Gender	Male
Ethnicity	Caucasian
Morphology	Epithelial-like
Growth properties	Monolayer, adherent

Données réglementaires

Citation	ACHN (Cytion catalog number 300117)

Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1067

Données biomoléculaires

Receptors expressed	CAIx- (carbonic anhydrase Ix)
Protein expression	P53 positive
Isoenzymes	CAIx-
Tumorigenic	Yes, in nude mice

Manipulation

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
Dissociation Reagent	Accutase
Doubling time	30 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 x 10^4 cells/cm^2 will result in a confluent monolayer within 4 days.
Fluid renewal	2 to 3 times per week

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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 24 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.

Contrôle de la qualité et analyse moléculaire

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.