Product sheet

Calu-1 Cells | 300141

Información general

Description	The Calu-1 cell line originates from human lung carcinoma, specifically non-small cell lung cancer (NSCLC). It was established from the pleural effusion of a 47-year-old Caucasian male with epidermoid carcinoma of the lung. This cell line exhibits epithelial-like morphology and has been used extensively in research focused on lung cancer biology, drug screening, and cytotoxicity studies. Calu-1 cells express several markers characteristic of lung epithelial cells and have been a valuable model for studying the molecular pathways involved in lung carcinogenesis and therapy resistance. Calu-1 cells are known for their high proliferation rate and robustness in culture, making them suitable for in vitro experimental setups. They retain several chromosomal abnormalities typical of cancer cells, which includes multiple copies of chromosomes 7 and 20, demonstrating their utility in genetic and cytogenetic studies. The cell line also exhibits mutations in key oncogenes and tumor suppressor genes like KRAS and TP53, respectively, which are of particular interest in lung cancer research. These genetic characteristics make Calu-1 a useful tool for investigating the impact of genetic alterations on cancer progression and for testing the efficacy of targeted therapies in a controlled environment.
Organism	Human
Tissue	Lung
Disease	Carcinoma
Metastatic site	Pleural effusion
Synonyms	CaLu-1, CALU-1, Calu.1, CALU 1, Calu 1, CALU1, Calu1

Características

Age	47 years
Gender	Male
Morphology	Epithelial-like
Cell type	Epidermoid
Growth properties	Adherent

Datos normativos

Calu-1 Cells | 300141

Citation	Calu-1 (Cytion catalog number 300141)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0608

Datos biomoleculares

Protein expression	P53 negative
Antigen expression	Blood Type A, Rh+, HLA A10, A11, B15, Bw35
Isoenzymes	Me-2, 1-2, PGM3, 1, PGM1, 1-2, ES-D, 1, AK-1, 1, GLO-1, 1-2, G6PD, B, Phenotype Frequency Product: 0.0359
Oncogenes	K-ras oncogene positive.
Karyotype	The stem line chromosome number is hypotriploid and the 2S component occurred at 14.2%. Modal chromosome number is 62. Seven markers occurred frequently, M1 (two copies per cell), M6 and M7 were found in most cells, M2 and M3, and M4 and M5 appeared to be mutually exclusive, i.e., only one of M2 or M3, and one of M4 or M5 were present in each cell. Y chromosome was not detected by QM band examination, although the cell line was initiated from a male.

Manejo

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
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.

Calu-1 Cells | 300141

Seeding density	1 x 10^4 cells/cm^2 will result in a 90% confluent monolayer in about 4 days
Fluid renewal	2 to 3 times per week
Post-Thaw Recovery	After thawing, plate the cells at 2 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.

Control de calidad y análisis molecular

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.