Product sheet

NCI-H211 Cells | 305837

Renseignements généraux

Description	NCI-H211 is a human lung carcinoma cell line classified as non-small cell lung cancer (NSCLC). It was derived from an adult patient and is part of the panel of thoracic malignancy models developed through the NCI-Navy Medical Oncology Branch. The cell line demonstrates epithelial morphology and adherent growth behavior in vitro, making it suitable for monolayer culture systems. It is typically maintained in RPMI-1640 medium supplemented with 10% fetal bovine serum and incubated under standard conditions (37°C, 5% CO_2). On a molecular level, NCI-H211 harbors mutations consistent with NSCLC pathogenesis. Specifically, it possesses an activating KRAS mutation, a hallmark of a subset of lung adenocarcinomas that drives oncogenic signaling through the MAPK and PI3K/AKT pathways. This mutation contributes to the cell line's resistance to certain targeted therapies, particularly EGFR inhibitors, while simultaneously rendering it a useful model for studying KRAS-directed therapeutic strategies. Protein-level profiling studies, such as those using reverse-phase protein arrays (RPPA), have identified NCI-H211 among the KRAS-mutant lung cancer models with specific signaling dependencies, aiding in the identification of biomarkers and therapeutic targets. NCI-H211 has been featured in large-scale proteomic and pharmacologic screens and has been used to evaluate drug sensitivities and protein expression patterns. These features make it an effective model for translational research focused on developing treatment approaches for KRAS-driven NSCLC and investigating resistance mechanisms associated with targeted and cytotoxic agents.
Organism	Human
Tissue	Metastatic
Disease	Lung small cell carcinoma
Synonyms	H211, H-211, NCIH211

Caractéristiques

Age	50 years
Gender	Female
Ethnicity	Caucasian
Growth properties	Aggregates in suspension

Données réglementaires

Citation	NCI-H211 (Cytion catalog number 305837)

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Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1529

Données biomoléculaires

Mutational profile	Mutation: TP53, Simple, p.Arg248Gln (c.743G>A), Unspecified (PubMed=1312696, PubMed=1565469)
Karyotype	Iso(3p), t(3;4)(pter-q12), t(3;11)(qter-p25)

Manipulation

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
Dissociation Reagent	None
Seeding density	0.1 to 1 x 10^6 cells/ml
Fluid renewal	2 to 3 times per week
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.

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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.