Product sheet

NCI-H2170 Cells | 305276

General information

Description	The NCI-H2170 cell line is derived from a human squamous cell carcinoma of the lung. This cell line is widely used in lung cancer research, particularly for studying the molecular mechanisms underlying squamous cell carcinoma, which is a common and aggressive form of lung cancer. NCI-H2170 cells provide a valuable model for investigating the genetic and epigenetic alterations associated with lung cancer, as well as for testing the efficacy of novel therapeutic agents. NCI-H2170 cells exhibit an epithelial morphology and express markers characteristic of squamous cell carcinoma, including cytokeratins and p63. They harbor genetic mutations typical of lung cancer, such as alterations in the TP53 and CDKN2A genes, which play critical roles in cell cycle regulation and tumor suppression. Researchers use NCI-H2170 cells to explore key signaling pathways involved in lung cancer progression, such as the EGFR, PI3K/Akt, and MAPK pathways. These cells are also employed in drug screening assays to evaluate the effectiveness of chemotherapeutic agents, targeted therapies, and combination treatments. Additionally, NCI-H2170 cells are used to study mechanisms of drug resistance and to develop strategies to overcome it. The relevance of the NCI-H2170 cell line in lung cancer research underscores its importance in advancing our understanding of cancer biology and in the development of new therapeutic approaches for lung cancer patients.
Organism	Human
Tissue	Lung
Disease	Squamous cell carcinoma
Synonyms	H2170, H-2170, NCIH2170

Characteristics

Age	Unspecified
Gender	Male
Ethnicity	European
Morphology	Epithelial
Growth properties	Adherent

Regulatory Data

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Citation	NCI-H2170 (Cytion catalog number 305276)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1535

Biomolecular Data

Handling

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, add 2.5 g/L glucose and 10 mM HEPES
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.
Fluid renewal	1 to 2 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.

Quality Control & Molecular Analysis

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.