Product sheet

NCI-H647 Cells | 305130

General information

Description	NCI-H647 cells are a human lung carcinoma cell line derived from a patient with large cell carcinoma of the lung. This cell line is part of the NCI (National Cancer Institute) panel of human tumor cell lines used extensively in cancer research, particularly in studies concerning lung cancer biology and therapeutics. The NCI-H647 cell line exhibits characteristics typical of large cell lung carcinoma, including rapid growth and the ability to form tumors when xenografted into immunocompromised mice. These cells are particularly useful for exploring the molecular mechanisms of lung cancer pathogenesis, including signal transduction pathways, genetic mutations involved in cancer progression, and the role of tumor microenvironment factors. NCI-H647 cells are often employed in drug screening studies to evaluate the efficacy and toxicity of chemotherapeutic agents and targeted therapies. Their responsiveness to various anti-cancer compounds helps in understanding the pharmacodynamics and potential resistance mechanisms of lung cancer treatments. This cell line is also used to study the interaction between cancer cells and therapeutic agents, providing insights into the development of more effective and personalized treatment strategies for lung cancer patients. Overall, the NCI-H647 cell line serves as a critical tool in lung cancer research, facilitating advancements in understanding the disease and developing novel therapeutic approaches.
Organism	Human
Tissue	Lung
Disease	Lung adenosquamous carcinoma
Metastatic site	Pleural effusion
Synonyms	NCI-H647, H-647, H647ell, NCIH647

Characteristics

Age	56 years
Gender	Male
Ethnicity	European
Morphology	Epithelial
Growth properties	Adherent

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Identifiers / Biosafety / Citation

Citation	NCI-H647 (Cytion catalog number 305130)
Biosafety level	1

Expression / Mutation

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
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	1:3 to 1:6
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

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.
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.

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STR profile

Amelogenin: x,x
CSF1PO: 10
D13S317: 9,11
D16S539: 9
D5S818: 12
D7S820: 10
TH01: 6,9.3
TPOX: 11
vWA: 17
D3S1358: 17
D21S11: 28,32.2
D18S51: 12,15
Penta E: 7
Penta D: 12,13
D8S1179: 11,13
FGA: 22,24
D6S1043: 18,2
D2S1338: 17,25
D12S391: 23
D19S433: 14