Product sheet

NCI-H1563 Cells | 305131

General information

Description	The NCI-H1563 cell line is derived from a human non-small cell lung carcinoma (NSCLC) and is part of the NCI-Navy Medical Oncology Branch collection. This cell line originates from a lung adenocarcinoma, a subtype of NSCLC, highlighting its utility in studying lung cancer pathogenesis and drug responses. It is a model for exploring cellular and molecular mechanisms of NSCLC, which constitutes a significant proportion of lung cancer cases worldwide. NCI-H1563 has been characterized extensively in genomic and proteomic studies, including tyrosine kinase signaling pathways, which are pivotal in lung cancer progression. It has been noted for its phosphotyrosine signaling profile, contributing to understanding activated receptor tyrosine kinases and non-receptor tyrosine kinases in NSCLC. Such pathways are key targets for precision therapies, emphasizing the importance of this cell line in translational cancer research. As part of a larger database of cancer cell lines, NCI-H1563 has also been utilized to analyze genetic mutations, copy number variations, and chromosomal alterations. It contributes to studies aimed at distinguishing driver mutations from passenger mutations in cancer genomics. These features make NCI-H1563 a valuable tool for identifying therapeutic targets, studying resistance mechanisms, and developing personalized treatment strategies for lung cancer.
Organism	Human
Tissue	Lung
Disease	Lung adenocarcinoma
Synonyms	NCI-H1563, H-1563, NCIH1563

Characteristics

Age	Age unspecified
Gender	Male
Ethnicity	European
Morphology	Fibroblast-Like
Growth properties	Adherent

Identifiers / Biosafety / Citation

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Citation	NCI-H1563 (Cytion catalog number 305131)
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	1:2 to 1:5
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: 10,11
D13S317: 9,14
D16S539: 9,13
D5S818: 12,13
D7S820: 7,8
TH01: 6
TPOX: 8,11
vWA: 17,18
D3S1358: 16,17
D21S11: 28,3
D18S51: 13,17
Penta E: 10,13
Penta D: 12,15
D8S1179: 13
FGA: 21,23
D6S1043: 12,13
D2S1338: 16,22
D12S391: 20,23
D19S433: 12,16