Product sheet

NCI-H157 Cells | 300387

General information

Description	NCI-H157 is a human non-small cell lung carcinoma (NSCLC) cell line, primarily used in cancer research to study tumorigenesis, chemotherapy resistance, and the molecular pathways involved in lung cancer progression. NCI-H157 cells are particularly useful for investigating the role of hypoxia-inducible factor-1 alpha (HIF-1α) in NSCLC. Studies have shown that HIF-1α plays a crucial role in promoting angiogenesis, proliferation, and survival of cancer cells under hypoxic conditions. Downregulation of HIF-1α via siRNA in NCI-H157 cells significantly reduces cell proliferation, induces apoptosis, and impairs the invasive ability of the tumor cells. Moreover, combination treatments using HIF-1α siRNA and chemotherapy agents, such as cisplatin (DDP), enhance the cytotoxic effects on NCI-H157 cells. The reduction of HIF-1α expression has been shown to increase the activity of apoptotic proteins like caspases 3 and 9 while decreasing the levels of anti-apoptotic proteins such as Bcl-2. Additionally, HIF-1α knockdown inhibits key signaling pathways involved in tumor growth, including the PI3K/AKT and Raf/MEK/ERK pathways. These molecular alterations contribute to the suppression of tumor cell survival and invasiveness. The NCI-H157 cell line is also responsive to various natural compounds and plant extracts. For example, extracts from *Stellera chamaejasme* L. have been found to induce apoptosis in NCI-H157 cells through the Fas death receptor pathway, further emphasizing the cell line's utility in evaluating novel therapeutic agents for lung cancer.
Organism	Human
Tissue	Lung
Disease	Lung squamous cell carcinoma
Synonyms	NCI H157, H157, H-157, NCI-157

Characteristics

Age	59 years
Gender	Male
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	NCI-H157 (Cytion catalog number 300387)

Expression / Mutation

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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% heat-inactivated 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.
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: 12
D13S317: 12
D16S539: 12,13
D5S818: 10,13
D7S820: 12
TH01: 7,9
TPOX: 6,12
vWA: 15
D3S1358: 17,18
D21S11: 32
D18S51: 13,15
Penta E: 7
Penta D: 02. Feb
D8S1179: 14,16
FGA: 22,23
D6S1043: 17,24
D2S1338: 21,22
D12S391: 20
D19S433: 11,13