NCI-H1734

305833

GENERAL INFORMATION

Description

NCI-H1734 is a human non-small cell lung cancer (NSCLC) cell line derived from a lung adenocarcinoma. It was established as part of the extensive NCI cell line program focused on thoracic malignancies and has been utilized in a broad range of preclinical studies related to lung cancer biology and therapeutic response. This cell line harbors a KRAS mutation, a characteristic that aligns with a subset of NSCLC cases known to exhibit resistance to EGFR inhibitors and altered responses to MEK and PI3K pathway-targeted therapies. Due to its molecular profile, NCI-H1734 is often used to model KRAS-driven tumorigenesis and to test compounds targeting downstream signaling cascades. Protein expression analyses, including reverse-phase protein arrays (RPPA), have revealed that NCI-H1734 exhibits a distinct phosphorylation pattern indicative of active PI3K/AKT and MAPK signaling. This has made it a valuable system for exploring oncogenic signaling dynamics and drug responsiveness. The cell line demonstrates sensitivity to agents targeting components of these pathways, including MEK inhibitors, and serves as a useful comparator in panels assessing pathway dependency across KRAS-mutant NSCLC models. Additionally, it is included in comprehensive molecular datasets such as the Cancer Cell Line Encyclopedia and has been evaluated in large-scale drug screening efforts to correlate proteomic and genomic features with pharmacologic profiles.
Histologically, NCI-H1734 cells exhibit characteristics of glandular epithelial origin, and they grow in adherent monolayers in vitro. They have been included in studies that investigate the impact of tumor microenvironment interactions and epithelial-mesenchymal transition (EMT) on therapeutic resistance. The inclusion of NCI-H1734 in several profiling studies has enhanced its utility as a reference model for adenocarcinoma subtypes within NSCLC, contributing to the development of precision oncology strategies for KRAS-mutant lung cancers.

Tissue	Lung
Disease	Lung adenocarcinoma

Synonyms

- H1734
- H-1734
- NCIH1734

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial

IDENTIFIERS

Citation

NCI-H1734 (Cytion catalog number 305833)

NCBI TaxID	9606
Cellosaurus	CVCL_1491

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EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Mutation: ATM, Simple, p.Gln65Pro (c.194A>C), Heterozygous, KRAS, Simple, p.Gly13Cys (c.37G>T), Heterozygous, RB1, Simple, p.Ser127Ile (c.380G>T), Homozygous, TP53, Simple, p.Arg273Leu (c.818G>T), Homozygous

HANDLING AND CULTURE

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.
Fluid renewal	2 to 3 times per week

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	56 years
Ethnicity	Caucasian

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Disclaimer

Our cells are provided for in vitro laboratory research purposes exclusively and are not intended for clinical or diagnostic use, nor are they to be administered to humans or used for veterinary purposes. Users must adhere to all applicable guidelines and regulations for the handling and use of these cells in a research setting.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

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