NCI-H1793

305911

GENERAL INFORMATION

Description

NCI-H1793 is a human non-small cell lung cancer (NSCLC) cell line derived from an adult patient with lung adenocarcinoma. The cells exhibit epithelial morphology and grow adherently in standard tissue culture conditions. As a representative model of pulmonary adenocarcinoma, NCI-H1793 retains key molecular and phenotypic characteristics associated with this histological subtype, making it suitable for in vitro studies of lung cancer biology, tumor progression, and therapeutic response.
Molecular characterization of NCI-H1793 has identified an activating mutation in the KRAS oncogene (G12C), a common driver alteration in lung adenocarcinoma. This mutation results in constitutive activation of downstream signaling pathways, including the MAPK and PI3K-AKT cascades, promoting proliferation and survival. The presence of KRAS G12C makes NCI-H1793 particularly valuable for investigating RAS-driven oncogenic signaling and for evaluating targeted inhibitors directed against mutant KRAS or its downstream effectors. The cell line has also been reported to harbor additional genomic alterations typical of NSCLC, supporting its relevance as a preclinical model for molecularly defined lung cancer.
Due to its defined oncogenic background and epithelial tumor phenotype, NCI-H1793 is widely used in studies assessing targeted therapies, resistance mechanisms, and combination treatment strategies in KRAS-mutant lung cancer. It serves as a robust platform for functional genomics, drug screening, and pathway analysis aimed at elucidating vulnerabilities in RAS-driven malignancies.

Tissue	Lung
Disease	Lung adenocarcinoma

Synonyms

- H1793
- H-1793
- NCIH1793

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	epithelial

IDENTIFIERS

Citation

NCI-H1793 (Cytion catalog number 305911)

NCBI TaxID	9606
Cellosaurus	CVCL_1496

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Mutation: p.Arg209Ter, Heterozygous; Mutation: p.Arg273His, Heterozygous

HANDLING AND CULTURE

Culture medium

HITES medium supplemented
The base medium for this cell line is DF12. To make the complete growth medium,
add the following components to the base medium:
0.005 mg/ml Insulin
0.01 mg/ml Transferrin
30 nM Sodium selenite (final conc.)
10 nM Hydrocortisone (final conc.)
10 nM beta-estradiol (final conc.)
Extra 2 mM L-glutamine (for final conc. of 4.5 mM)
5% fetal bovine serum (final conc.)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.
Dissociation reagent	Accutase

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	52 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.

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