Product sheet

NCI-H1755 Cells | 305834

General information

Description	NCI-H1755 is a human non-small cell lung cancer (NSCLC) cell line derived from a lung adenocarcinoma. It is part of the extensive National Cancer Institute (NCI) panel of thoracic cancer models, developed to support translational research into lung cancer biology and therapeutic response. This cell line exhibits a KRAS mutation, a feature common in many lung adenocarcinomas that contributes to constitutive activation of MAPK and PI3K signaling pathways, promoting uncontrolled cell growth and resistance to certain targeted therapies. NCI-H1755 is included in several large-scale functional genomic and pharmacogenomic screens, including those profiling protein expression and response to targeted agents. Its molecular signature indicates activity in PI3K/AKT and RAS/RAF/MEK signaling pathways, which has made it a valuable tool for evaluating the effects of MEK inhibitors and other agents targeting downstream effector molecules. The cell line has also contributed to research focused on epithelial polarity, with studies identifying structural disruptions in polarity complex genes, such as PARD3, across various epithelial cancers including lung adenocarcinoma. In vitro, NCI-H1755 cells grow in adherent monolayers and demonstrate epithelial morphology. They are maintained under standard culture conditions in RPMI-1640 medium supplemented with 10% fetal bovine serum. Due to its reproducible growth characteristics, mutational profile, and inclusion in molecular oncology datasets, NCI-H1755 is a frequently used model for investigating mechanisms of tumor progression, drug resistance, and potential therapeutic targets in KRAS-mutant NSCLC.
Organism	Human
Tissue	Metastatic
Disease	Lung adenocarcinoma
Synonyms	H1755, H-1755, NCIH1755

Characteristics

Age	65 years
Gender	Female
Ethnicity	Caucasian
Cell type	Epithelial-like and/or rounded
Growth properties	Adherent, single cells and small clusters in suspension

Regulatory Data

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Citation	NCI-H1755 (Cytion catalog number 305834)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1492

Biomolecular Data

Mutational profile	Mutation: BRAF, Simple, p.Gly469Ala (c.1406G>C), Heterozygous, TP53, Simple, p.Cys242Phe (c.725G>T), Homozygous

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	Accutase
Fluid renewal	2 to 3 times per week
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.

Thawing and Culturing Cells	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.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
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.
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.

Quality Control & Molecular Analysis

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.