NCI-H1299

300485

GENERAL INFORMATION

Description

NCI-H1299, also known as H1299, is a human non-small cell lung cancer (NSCLC) cell line established from a lymph node metastasis derived from an adult male patient with lung carcinoma. Along with H292 cells, H1299 is widely used as an NSCLC model in cancer biology and immuno-oncology research. The cell line exhibits an epithelial-like morphology characterized by adherent, flattened cells with a thickness of less than 5 µm and an approximate doubling time of 22–30 hours. H1299 cells express keratin and vimentin but are negative for neurofilament triplet protein, reflecting a phenotype with both epithelial and mesenchymal characteristics.
Genetically, H1299 cells harbor a homozygous partial deletion in the TP53 gene, resulting in complete loss of p53 protein expression. The line is also characterized by wild-type KRAS status, distinguishing it from other NSCLC models such as A549 cells, which carry endogenous KRAS mutations. Due to the absence of functional p53 signaling combined with intact KRAS, H1299 cells are frequently used to study tumor suppressor biology, oncogenic signaling pathways, apoptosis, metastasis, and therapeutic resistance mechanisms. Compared with more epithelial NSCLC cell lines such as A549, H1299 cells display a more mesenchymal phenotype with reduced epithelial marker expression, making them particularly useful for investigations into epithelial-to-mesenchymal transition (EMT), invasion, and metastatic progression.
H1299 cells have also been reported to synthesize the neuropeptide neuromedin B (NMB) at low levels, while lacking detectable gastrin-releasing peptide (GRP) production. Their robust growth characteristics, high transfectability, and well-characterized molecular background have contributed to their broad use in studies involving targeted therapies, gene editing, immune-mediated cytotoxicity, and downstream KRAS-associated signaling pathways. As with all long-term cultured tumor cell models, periodic authentication and confirmation of key molecular features are recommended to ensure experimental reproducibility.

Tissue	Lung
Disease	Carcinoma

Synonyms

- H1299
- H-1299
- NCIH1299

CLASSIFICATION

Organism	Human
Growth properties	Adherent
Biosafety level	1

IDENTIFIERS

Citation

NCI-H1299 (Cytion catalog number 300485)

NCBI TaxID	9606
Cellosaurus	CVCL_0060

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

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

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS, add 2.5 g/L glucose and 10 mM HEPES

Dissociation reagent	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.

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	59 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

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