NCI-H1581

305598

ALGEMENE INFORMATIE

Beschrijving

The NCI-H1581 cell line is a human non-small cell lung cancer (NSCLC) model classified as large-cell carcinoma. This cell line is characterized by the amplification of the fibroblast growth factor receptor 1 (FGFR1) gene, which plays a critical role in oncogenic signaling pathways, including RAS/RAF/MAPK and PI3K/AKT. FGFR1 amplification and the resultant overexpression make NCI-H1581 a suitable model for studying FGFR-targeted therapies in lung cancer. These cells exhibit high sensitivity to FGFR inhibitors like CPL304110 and AZD4547, which have been shown to significantly reduce proliferation and induce apoptosis in both in vitro and xenograft models.
NCI-H1581 has been extensively utilized to explore resistance mechanisms to FGFR inhibitors. Resistance can emerge through secondary mutations, incomplete pathway inhibition, or activation of alternative signaling routes. Notably, overactivation of the p38 MAPK and AKT pathways has been implicated in acquired resistance to FGFR inhibition in this cell line. Studies show that combining FGFR inhibitors with p38 or AKT pathway inhibitors can restore sensitivity, providing insights into potential combination therapies for FGFR-dependent cancers.
Beyond FGFR research, NCI-H1581 serves as a model to investigate the interplay of oncogenic signaling pathways in large-cell carcinoma. It supports applications in drug discovery, mechanistic studies, and preclinical validation of targeted therapies. The cell line's genetic and molecular attributes, along with its robust response to specific inhibitors, make it a valuable resource for advancing therapeutic strategies against FGFR1-amplified NSCLC.

Weefsel	Lung
Ziekte	Large cell carcinoma

Synoniemen

- H1581
- H-1581
- NCIH1581

CLASSIFICATIE

Organisme	Mens
Seks	Man
Groei-eigenschappen	Adhesie en suspensie
Bioveiligheidsniveau	1

KENMERKEN

Morfologie	Epithelial-like

IDENTIFICATIEGEGEVENS

Bronvermelding

NCI-H1581 (Cytion catalog number 305598)

NCBI-belastingnummer	9606
Cellosaurus	CVCL_1479

BEHANDELING EN KWEEK

Kweekmedium

DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)

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

Supplementen

Supplement the medium with 10% FBS

Dissociatiereagens	Accutase
Zaaidichtheid	2-4*10^4/cm²

Ontdooien en kweken

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.

KWALITEITSCONTROLE EN CRYOPRESERVATIE

Onvruchtbaarheid

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.

Kweekmedium invriezen	As a cryopreservation medium, we recommend CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

Opslagvoorwaarden

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.

Verzendvoorwaarden

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.

DONATEUR

Leeftijd van de donor	44 years
Etnische afkomst	Caucasian

JURIDISCHE EN VEILIGHEIDSASPECTEN

Veiligheidsmaatregelen

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.

Garantie

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.

Er is een overeenkomst inzake materiaaloverdracht vereist	Yes

PRODUCTGEGEVENS

Overzichtstabel