SCLC-21H

300225

GENERAL INFORMATION

Description

The SCLC-21H cell line was derived from the pleural effusion of a patient with small cell lung cancer (SCLC) of the oat cell subtype. This cell line, along with SCLC-22H, was established during a period of chemotherapy, with SCLC-21H being the second to be derived after an additional 15 days of treatment. While both cell lines originated from the same patient, they display significantly different biochemical, morphological, and kinetic properties. SCLC-21H, for example, has a faster population doubling time and a higher colony-forming efficiency compared to SCLC-22H. These differences make SCLC-21H a distinct tool for studying certain variant forms of SCLC.
Biochemically, SCLC-21H differs from SCLC-22H in its low or undetectable levels of key neuroendocrine markers such as L-Dopa decarboxylase, bombesin, and carcinoembryonic antigen. However, both cell lines express high levels of neuron-specific enolase and creatine kinase isoenzyme BB, which are characteristic markers of SCLC. Moreover, while both cell lines exhibit c-myc amplification, SCLC-21H contains an additional rearranged and amplified EcoRI c-myc fragment, further highlighting its genetic uniqueness.
Structurally, SCLC-21H exhibits loose growth in culture and features prominent nucleoli and abundant cytoplasm, contrasting with the more tightly packed morphology of SCLC-22H. The presence of ultrastructurally dense core granules in SCLC-21H confirms its neuroendocrine origin, and it is classified as representing a variant form of SCLC. These distinct features make SCLC-21H a valuable model for exploring the variant forms of small cell lung cancer and understanding their response to chemotherapy.

Tissue	Lung
Disease	Carcinoma
Metastatic site	Pleural effusion

Synonyms

- SCLC21H

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Suspension
Biosafety level	1

CHARACTERISTICS

Tumourigenic	Yes in nude mice
Ploidy status	Aneuploid

Karyotype

Modal chromosome number 42/43, range 39-44. Chromosome deletion 3p.

Doubling time	45 hours

IDENTIFIERS

Citation

SCLC-21H (Cytion catalog number 300225)

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

NCBI TaxID	9606
Cellosaurus	CVCL_0024

EXPRESSION AND SUSCEPTIBILITY

Oncogenes

Myc amplification present, c-myc expression high

HANDLING AND CULTURE

Culture medium

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

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

Supplements

Supplement the medium with 10% heat-inactivatedFBS

Dissociation reagent	Accutase

Subculturing

Once or twice a week add 5 ml of fresh cell culture medium, as soon as the culture medium gets acidic. Suculture as soon as many very large clusters are observed. Dissociate the clusters by collecting the cells, rinsing once using PBS without calcium/magnesium and adding 3-5 ml Accutase. Incubate for 10minutes at 37 degree Celsius. Collect the cells following centrigation, resuspend in fresh cell culture medium and count.

Seeding density	2 to 4 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-thaw recovery	Cells will recover from freezing within 24 to 48 hours.

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 50% basal medium + 40% FBS + 10% DMSO, 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	46 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