

SCLC-21H Cells | 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.

Organism Human

Tissue Lung

Disease Carcinoma

Metastatic site Pleural effusion

Synonyms SCLC21H

Characteristics

Age 46 years

Gender Male

Ethnicity Caucasian

Growth properties Suspension

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Regulatory Data

Citation	SCLC-21H (Cytion catalog number 300225)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0024

Biomolecular Data

Oncogenes	Myc amplification present, c-myc expression high
Tumorigenic	Yes in nude mice
Ploidy status	Aneuploid
Karyotype	Modal chromosome number 42/43, range 39-44. Chromosome deletion 3p.

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO ₃ (Cytion article number 820700a)
Supplements	Supplement the medium with 10% heat-inactivatedFBS
Dissociation Reagent	Accutase
Doubling time	45 hours
Subculturing	Once or twice a week add 5 ml of fresh cell culture medium, as soon as the culture medium gets acidic. Subculture 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 centrifugation, 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

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Post-Thaw Recovery

Cells will recover from freezing within 24 to 48 hours.

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.

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 $300 \times g$ 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.

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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.