

NCI-H187 Cells | 305237

General information

Description

The NCI-H187 cell line is derived from human small cell lung carcinoma (SCLC). This cell line is particularly significant for cancer research due to its origins from a highly aggressive and rapidly proliferating cancer type. NCI-H187 cells exhibit typical characteristics of SCLC, including the presence of neuroendocrine markers such as synaptophysin and chromogranin A. These markers make NCI-H187 a valuable model for studying neuroendocrine differentiation in lung cancers. The cells grow as floating aggregates and adherent clusters, which is characteristic of SCLC morphology in vitro.

NCI-H187 has been utilized in various studies to explore the mechanisms underlying drug resistance in SCLC, as well as to test the efficacy of novel chemotherapeutic agents. Due to their rapid growth rate and high tumorigenicity when xenografted into immunocompromised mice, these cells provide an excellent model for in vivo studies of SCLC. The cell line is also useful for investigating the genetic and epigenetic alterations associated with lung cancer, including the amplification of oncogenes and the loss of tumor suppressor genes. NCI-H187 remains a crucial tool in the ongoing effort to develop more effective treatments for small cell lung carcinoma.

Organism Human

Tissue Lung

Disease Small cell carcinoma

Metastatic site Pleural effusion

Synonyms H187, H-187, NCIH187

Characteristics

Age 47 years

Gender Male

Ethnicity European

Cell type Epithelial

Growth properties Adherent

Regulatory Data

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Citation	NCI-H187 (Cytion catalog number 305237)
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Biosafety level	1
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NCBI_TaxID	9606
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CellosaurusAccession	CVCL_1501
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Biomolecular Data

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO ₃ (Cytion article number 820700a)
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Supplements	Supplement the medium with 10% FBS
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Dissociation Reagent	Accutase
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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.
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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.
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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.

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

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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.