PC-9

305045

GENERAL INFORMATION

Description

The PC-9 cell line is derived from a human lung adenocarcinoma, a subtype of non-small cell lung cancer (NSCLC). This cell line is particularly notable for harboring an activating mutation in the EGFR gene, specifically the exon 19 deletion (E746_A750del), which is a common driver mutation in NSCLC. This alteration makes PC-9 an invaluable model for studying the biology of EGFR-driven cancers and evaluating the efficacy of tyrosine kinase inhibitors (TKIs) like gefitinib and erlotinib, which specifically target this pathway.
PC-9 cells have been extensively used in research focused on resistance mechanisms to EGFR TKIs, particularly the emergence of secondary mutations like T790M. These studies have informed the development of third-generation inhibitors such as osimertinib, which target both the primary EGFR mutation and resistance-associated alterations. The cell line also exhibits sensitivity to other inhibitors targeting downstream signaling pathways, including those involved in PI3K/AKT and MAPK signaling cascades, underscoring its utility in translational cancer research.
In addition to its genetic and pharmacological attributes, PC-9 has been incorporated into high-throughput drug screening programs, facilitating the identification of compounds with selective activity against EGFR-mutated NSCLC. The line's well-characterized genomic landscape and consistent phenotypic behavior in vitro make it a cornerstone for both basic and applied lung cancer research, particularly in the context of targeted and combination therapy.

Tissue	Lung
Disease	Lung adenocarcinoma
Metastatic site	Lymph node

Synonyms

- PC9
- PC-9/S1
- PC-9S1

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Heterogeneous mixture of round cells and spindle shaped cells
Tumourigenic	Yes

IDENTIFIERS

Citation

PC-9 (Cytion catalog number 305045)

NCBI TaxID	9606
Cellosaurus	CVCL_B260

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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% FBS

Dissociation reagent	Accutase

Subculturing

Gather the suspension cells in a 15 ml tube and gently wash the adherent cells with PBS lacking calcium and magnesium (use 3-5 ml for T25 flasks and 5-10 ml for T75 flasks). Apply Accutase (1-2 ml for T25 flasks, 2.5 ml for T75 flasks) ensuring full coverage of the cell layer. Allow the cells to incubate at 37°C for 10-15 minutes. Following incubation, combine and centrifuge both the suspension and adherent cells. After centrifugation, carefully resuspend the cell pellet and transfer the cell suspension into new flasks containing fresh medium.

Fluid renewal	1 to 2 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	45 years

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

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