

Panc 05.04 Cells | 305394**General information****Description**

The Panc 05.04 cell line is a pancreatic ductal adenocarcinoma (PDAC) model that serves as a valuable resource for studying pancreatic cancer biology and therapeutic responses. Originating from a human pancreatic carcinoma, Panc 05.04 represents a critical tool in preclinical research due to its relevance to one of the most aggressive malignancies with poor patient outcomes. This cell line displays molecular and genomic characteristics that align with the heterogeneous nature of PDAC, including mutations commonly observed in KRAS, TP53, and other driver oncogenes that are prevalent in pancreatic cancer progression.

Panc 05.04 has been extensively profiled as part of large-scale genomic initiatives, such as the Cancer Cell Line Encyclopedia (CCLE), where its gene expression, copy number variations, and drug sensitivity have been characterized. Notably, Panc 05.04 has been assessed for its pharmacological response to various anticancer agents, offering insights into its sensitivity or resistance profiles to chemotherapy and targeted therapies.

As a model system, Panc 05.04 facilitates investigations into the molecular mechanisms underlying PDAC progression, chemoresistance, and tumor microenvironment interactions. It also provides a platform for testing emerging targeted therapies and immunotherapeutic strategies aimed at overcoming the refractory nature of pancreatic cancers.

Organism

Human

Tissue

Pancreas

Disease

Adenocarcinoma

Applications

3D cell culture

Synonyms

Panc-05.04, Panc_05_04, Panc05.04, Panc 5.04, Panc5.04, PANC0504, Panc0504, Pa18C, PL-18, PL18

Characteristics**Age**

77 years

Gender

Female

Ethnicity

Caucasian

Morphology

Epithelial-like

Cell type

Epithelial cell

Growth properties

Adherent

Panc 05.04 Cells | 305394**Regulatory Data****Citation** Panc 05.04 (Cytion catalog number 305394)**Biosafety level** 1**NCBI_TaxID** 9606**CellosaurusAccession** CVCL_1637**Biomolecular Data****Antigen expression** MHC class I +; MHC class II -; Blood type B; Rh+**Oncogenes** K-ras+**Tumorigenic** Yes; Yes in nude or SCID mice**Mutational profile** Mutation: KRAS, Simple, p.Gly12Asp (c.35G>A), Heterozygous**Handling****Culture Medium** RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO₃ (Cytion article number 820700a)**Supplements** Supplement the medium with 15% FBS, 20 µg/ml human recombinant insulin**Dissociation Reagent** Trypsin-EDTA**Doubling time** 46 hours**Subculturing** For routine adherent cell culture: Aspirate the old culture medium from the adherent cells, and wash them with PBS to remove any remaining medium. After aspirating the PBS, add the appropriate volume of Trypsin/EDTA solution based on the culture vessel size (e.g., 1 ml for a T25 flask, 3 ml for a T75 flask) and incubate at room temperature or 37°C until the cells detach (5-10 minutes). Monitor detachment under a microscope, and gently tap the vessel if necessary to release the cells. Once detached, add complete medium to inactivate the Trypsin/EDTA, gently resuspend the cells, and transfer an aliquot of the cell suspension into a new culture vessel containing fresh medium. Place the vessel in an incubator set to 37°C with 5% CO₂, and change the medium every 2-3 days.

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Seeding density 2-4*10⁴/cm²

Fluid renewal 1 to 2 times per week

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.

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 x 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% CO₂, 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.