Panc 10.05

300599

GENERAL INFORMATION

Description

The Panc 10.05 cell line is a human pancreatic ductal adenocarcinoma (PDAC) cell line, which is used in studies exploring the biology of pancreatic cancer and potential therapeutic interventions. Like other PDAC cell lines, Panc 10.05 cells are often employed in research focused on understanding the tumor microenvironment, cancer cell proliferation, and mechanisms of resistance to chemotherapy. This cell line, along with others such as BxPC-3 and HPAF-II, has been used to test the effects of novel anti-cancer agents, including iron chelators like deferasirox (DFX). Studies have shown that DFX exhibits dose-dependent antiproliferative activity against Panc 10.05 cells by inducing apoptosis and arresting the cell cycle in the S-phase.

Panc 10.05 has also been used to explore the role of inflammation and immune modulation in pancreatic cancer. For example, in co-culture models with macrophages, Panc 10.05 cells were shown to interact with tumor-associated macrophages (TAMs), creating a pro-inflammatory microenvironment. This interaction leads to the activation of the NLRP3 inflammasome, which plays a critical role in promoting tumor growth and immune evasion. Inhibition of the NLRP3 inflammasome by specific inhibitors like MCC950 has been shown to reduce the pro-inflammatory cytokine response and tumor cell proliferation, highlighting its potential as a therapeutic target.

Overall, the Panc 10.05 cell line serves as a robust model for studying both the direct effects of therapeutic agents and the complex interactions within the tumor microenvironment in pancreatic cancer, aiding in the development of new treatment strategies for this aggressive disease.

Tissue	Pancreas
Disease	Pancreatic ductal adenocarcinoma

Applications

3D cell culture, Cancer research

Synonyms

- Panc-10.05
- Panc10.05
- PANC-10-05
- PANC 1005
- PANC1005
- Panc1005
- Pa16C
- PL12
- PL-12

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial
Cell type	Epithelial cell

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Tumourigenic	Yes, forms tumors in nude or SCID mice

IDENTIFIERS

Citation

Panc 10.05 (Cytion catalog number 300599)

NCBI TaxID	9606
Cellosaurus	CVCL_1639

EXPRESSION AND SUSCEPTIBILITY

Protein expression

Cytokeratin 7, cytokeratin 18

Antigen expression

MHC class I +, MHC class II -

Oncogenes

K-ras+

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 20% heat-inactivated FBS, 10 Units/mL human recombinant insulin

Dissociation reagent	Accutase

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.

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	81 years
Ethnicity	European

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