AsPC-1

300158

GENERAL INFORMATION

Description

The AsPC1 cell line, derived from a 62-year-old female patient with adenocarcinoma of pancreas and metastases to several abdominal organs, has become a pivotal model for studying pancreatic cancer, one of the most aggressive and lethal malignancies. They display a high degree of invasiveness compared to other pancreatic cancer cell lines, which makes them particularly useful for studies on cancer metastasis and tumor invasion.
AsPC1 cells have been instrumental in understanding the metabolic pathways involved in pancreatic cancer, including glutamine and glycerophospholipid metabolism. AsPC1 cells have been used to investigate the function of matrix metalloproteinases (MMPs) in metastasis, a crucial component of the biology of pancreatic cancer.
AsPC1 cells have further been used to evaluate the efficacy of treatments such as the HDAC inhibitor AR-42 and the antimitotic and STAT3 inhibitor LTP-1, demonstrating the potential of these compounds to suppress tumor growth and induce apoptosis in pancreatic cancer cell lines.
The development of xenograft models using AsPC1 cells has allowed researchers to study pancreatic cancer in a more physiologically relevant context and have provided valuable insights into the transformation of normal human pancreatic duct cells into adenocarcinomas.
AsPC1 cells continue to be a valuable resource for exploring the therapeutic bispecific pathways and intracellular tumor antigens associated with pancreatic cancer.

Tissue	Pancreas
Disease	Adenocarcinoma
Metastatic site	Ascites

Synonyms

- AsPc-1
- Aspc-1
- ASPC-1
- As-PC1
- ASPC1
- AsPC1
- Aspc1
- AsPc1

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

IDENTIFIERS

Citation

AsPC-1 (Cytion catalog number 300158)

NCBI TaxID	9606

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Cellosaurus	CVCL_0152

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

AsPC-1 cells carry a homozygous Kras mutation in codon12: GGT(Gly) >GAT(Asp)

Products

Carcinoembryonic antigen (CEA), human pancreas associated antigen, human pancreas specific antigen, mucin

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

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.

Seeding density	We recommend to seed the cells at 2 x 10^4 cells/cm^2.
Fluid renewal	2 to 3 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	62 years
Ethnicity	Caucasian

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