Product sheet

AsPC-1 Cells | 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.
Organism	Human
Tissue	Pancreas
Disease	Adenocarcinoma
Metastatic site	Ascites
Synonyms	AsPc-1, Aspc-1, ASPC-1, As-PC1, ASPC1, AsPC1, Aspc1, AsPc1

Characteristics

Age	62 years
Gender	Female
Ethnicity	Caucasian
Growth properties	Adherent

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Regulatory Data

Citation	AsPC-1 (Cytion catalog number 300158)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_0152

Biomolecular Data

Products	Carcinoembryonic antigen (CEA), human pancreas associated antigen, human pancreas specific antigen, mucin
Mutational profile	AsPC-1 cells carry a homozygous Kras mutation in codon12: GGT(Gly) >GAT(Asp)

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 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
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% 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.