PSN-1

305618

GENERAL INFORMATION

Description

The PSN-1 cell line is a human pancreatic adenocarcinoma model established from a primary pancreatic tumor. It is particularly notable for harboring amplifications of both the c-myc oncogene and the c-Ki-ras gene with a point mutation at codon 12. This mutation substitutes arginine for glycine (GGT to CGT), leading to an activated form of c-Ki-ras with transforming potential. PSN-1 retains the same molecular characteristics as the original tumor tissue, including a 50-fold amplification of c-myc and a 3- to 6-fold amplification of the mutated c-Ki-ras. These oncogenic amplifications are accompanied by significantly increased mRNA expression for both genes, suggesting their critical role in tumor progression.
PSN-1 was derived through an unconventional process where frozen tumor tissues, stored for 1.5 years at -80°C without cryopreservation agents, were successfully transplanted into nude mice. From the resulting xenograft, the PSN-1 cell line was established and demonstrated stable oncogenic amplifications in vitro, mirroring those found in the original tumor and its metastatic lymph nodes. The cell line displays heterogeneous growth characteristics, with cells either adhering strongly as monolayers or growing in suspension. This dual behavior reflects a diverse cell population capable of adapting to different culture conditions.

Tissue	Pancreas
Disease	Pancreatic adenocarcinoma

Applications

3D cell culture

Synonyms

- PSN1

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Epithelial cell
Doubling time	21 hours

IDENTIFIERS

Citation

PSN-1 (Cytion catalog number 305618)

NCBI TaxID	9606
Cellosaurus	CVCL_1644

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Gene deletion: CDKN2A, Homozygous; Gene deletion: SMAD4, Homozygous; Mutation: KRAS, Simple, p.Gly12Arg (c.34G>C), Heterozygous; Mutation: TP53, Simple, p.Lys132Gln (c.394A>C), Homozygous

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
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	Unspecified
Ethnicity	East Asian

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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