Product sheet

BxPC-3 Cells | 305031

General information

Description	BxPC-3 cells, originating from the pancreatic adenocarcinoma of a 61-year-old female patient who underwent radiation and chemotherapy, have become a fundamental asset in cancer research, particularly for studying pancreatic ductal adenocarcinoma. The absence of the SMAD4/DPC4 protein due to homozygous deletions in BxPC 3 cells makes them an invaluable resource for research into pancreatic cancer's genetic landscape. Tumors grown from BxPC-3 cells in nude mice produce carcinoembryonic antigen, human pancreas cancer-associated antigen, human pancreas-specific antigen, and traces of mucin. This highlights the ability of the cell line to closely replicate the histopathological traits of the primary tumor. The production of mucinous tissues, in particular, underscores the cell line's value for detailed pancreatic adenocarcinoma studies, reflecting the original tumor's characteristics. BxPC-3 cells' significant expression of angiogenic factors such as interleukin-8 (IL-8), vascular endothelial growth factor (VEGF), and prostaglandin E2 (PGE2) opens avenues for exploring angiogenesis in cancer progression and identifying potential therapeutic targets. In summary, the pancreatic adenocarcinoma cell line BxPC-3 are pivotal in cancer research, especially for pancreatic ductal adenocarcinoma research. Their lack of SMAD4/DPC4 protein because of homozygous deletions and their ability to replicate the primary tumor's histopathological features, including mucinous tissues, make them invaluable for studying the genetic landscape and pathology of pancreatic cancer.
Organism	Human
Tissue	Pancreas
Disease	Pancreatic ductal adenocarcinoma
Synonyms	BxPc-3, BxPC-3, Bx-PC3, BxPC3, BxPC3, BxPc3, Biopsy xenograft of Pancreatic Carcinoma line-3

Characteristics

Age	61 years
Gender	Female
Ethnicity	European
Morphology	Epithelial
Growth properties	Adherent

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Identifiers / Biosafety / Citation

Citation	BxPC-3 (Cytion catalog number 305031)
Biosafety level	1

Expression / Mutation

Protein expression	Mucin, Pancreas Cancer Specific Antigen(Pancreas Cancer Associated Antigen), Carcinoembryonic Antigen(Cea)
Tumorigenic	Yes

Handling

Culture Medium	RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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.
Split ratio	1:2 to 1:4
Fluid renewal	2 to 3 times per week
Freeze medium	CM-1 (Cytion catalog number 800100)

Handling of cryopreserved cultures

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.

Quality control / Genetic profile / HLA

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.

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STR profile

Amelogenin: x,x
CSF1PO: 13
D13S317: 11
D16S539: 9,11
D5S818: 11
D7S820: 10,13
TH01: 9
TPOX: 8
vWA: 14,18
D3S1358: 14,16
D21S11: 29
D18S51: 12
Penta E: 12,14
Penta D: 14
D8S1179: 13
FGA: 20,21
D6S1043: 12
D2S1338: 17,19
D12S391: 19.3,20
D19S433: 13,16.2