PM-LGSOC-01

300305

GENERAL INFORMATION

Description

PM-LGSOC-01 is a cell line derived from peritoneal metastasis of a low-grade serous ovarian carcinoma (LGSOC). This cell line was established as part of a comprehensive research model that also included a patient-derived xenograft (PDX). The creation of PM-LGSOC-01 involved orthotopic engraftment via subperitoneal tumor slurry injection in SCID/Beige mice, leading to an early-stage transplantable peritoneal metastasis (PM)-PDX model. Histological analysis confirmed that both the PM-PDX and PM-LGSOC-01 cells retained the micropapillary and cribriform growth patterns typical of LGSOC, with tumor budding, and expression of markers such as PAX8 and WT1. Genetic analysis showed that the primary tumor, the PM, and the cell line share a KRAS c.35 G > T (p.Gly12Val) mutation, making this model relevant for studying LGSOC progression and treatment response, particularly in relation to the MAPK pathway.
PM-LGSOC-01 exhibits key characteristics relevant for preclinical research. It has a doubling time of approximately 42 hours in early passages, which decreased to 23 hours in later stages of cell culture, and has been maintained for over 100 in vitro passages. The cell line demonstrates epithelial morphology with Epithelial-like organization and high cell-cell adhesion. However, it shows limited response to platinum-based chemotherapy but is highly sensitive to paclitaxel (IC50: 6.3 ± 2.2 nM). Additionally, PM-LGSOC-01 is particularly sensitive to the MEK inhibitor trametinib (IC50: 7.2 ± 0.5 nM), both in vitro and in vivo, reflecting the impact of the KRAS mutation on therapeutic responses.
PM-LGSOC-01 serves as a valuable tool for investigating LGSOC, particularly in the context of drug resistance, tumorigenicity, and sensitivity to targeted therapies like MEK inhibitors. Its use in developing personalized treatment approaches for low-grade serous ovarian carcinoma is critical, given the poor responsiveness of LGSOC to conventional chemotherapy compared to high-grade serous ovarian carcinoma (HGSOC).

Tissue	Ovary
Disease	Low grade-serous ovarian carcinoma
Metastatic site	Peritoneum

Synonyms

- M28/2

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Doubling time	42 hours

IDENTIFIERS

Citation

PM-LGSOC-01 (Cytion catalog number 300305)

NCBI TaxID	9606

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

Cellosaurus	CVCL_xx32

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

KRAS c.35 G > T (p.(Gly12Val)) mutation

HANDLING AND CULTURE

Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS and 1% NEAA

Dissociation reagent	Trypsin/EDTA and Ca2+/Mg2+ free phosphate buffer

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	1 x 10^4 cells/cm^2

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	60 years

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.

Third-party agreements apply	Yes