Product sheet

PM-LGSOC-01 Cells | 300305

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).
Organism	Human
Tissue	Ovary
Disease	Low grade-serous ovarian carcinoma
Metastatic site	Peritoneum
Synonyms	M28/2
Age	60 years
Gender	Female
Morphology	Epithelial-like

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Growth properties	Adherent
Citation	PM-LGSOC-01 (Cytion catalog number 300305)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_xx32
Mutational profile	KRAS c.35 G > T (p.(Gly12Val)) mutation
Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
Dissociation Reagent	Trypsin/EDTA and Ca2+/Mg2+ free phosphate buffer
Doubling time	42 hours
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

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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.

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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.