Data Sheet

DOV13 Human Ovarian Carcinoma Cell Line

Cancer Cell Line

SCC186

Pack Size: ≥ 1x10^6 viable cells/vial

Store in: Liquid nitrogen

FOR RESEARCH USE ONLY

Not for use in diagnostic procedures. Not for Human or Animal Consumption.

Background

Epithelial carcinomas are the most common ovarian cancer, accounting for 90 percent of cases. Ovarian carcinoma is typically diagnosed at late stage after cancer has metastasized beyond the ovaries, greatly reducing treatment options and contributing to the poor survival rate of this cancer type.[1] Robust cellular models have been essential to understanding the mechanisms of ovarian cancer metastasis and development of potential therapeutic strategies.

The DOV13 human ovarian carcinoma cell line is one of the most studied and characterized cellular models for metastatic ovarian cancers, having been utilized in many cellular studies focusing on cellular migration and invasion. DOV13 cells are responsive to vascular endothelial growth factor (VEGF),[2] express estrogen receptor[3] and matrilysin (MMP-7), a marker of metastatic and invasive epithelial carcinomas,[4] and secrete the proteolytic factor matrix metalloproteinase-2 (MMP-2).[5] DOV13 cells are genetically well-characterized and harbor deletion of the tumor suppressor CDKN2A.[6] The characteristics of the DOV13 cell line make it a pertinent model for the most malignant ovarian cancer.

Source

The DOV13 human ovarian carcinoma cell line was isolated from ovarian adenocarcinoma tissue.[2]

Short Tandem Repeat (STR) Profile

D3S1358: 14, 16	D16S539: 10, 13
TH01: 6, 9.3	CSF1PO: 8, 10
D21S11: 32.2, 33.2	Penta D: 3.2, 8
D18S51: 12, 16	vWA: 17, 19
Penta E: 8	D8S1179: 12, 14
D5S818: 11	TPOX: 6, 8
D13S317: 11	FGA: 21, 24
D7S820: 10	Amelogenin: X

Cancer cell lines are inherently genetically unstable. Genetic instability may arise in the form of loss of heterozygosity of alleles at one or more genetic sites with increased passages.

Storage & Handling

DOV13 human ovarian carcinoma cell line should be stored in liquid nitrogen. The cells can be cultured for at least 10 passages after initial thawing without significantly affecting the cell marker expression and functionality.

Quality Control Testing

- Each vial contains ≥ $1x10^6$ viable cells.
- Cells are tested negative for infectious diseases by a Human Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are verified to be of human origin and negative for inter-species contamination as assessed by a Contamination CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are negative for mycoplasma contamination.
- Each lot of cells are genotyped by STR analysis to verify the unique identity of the cell line.

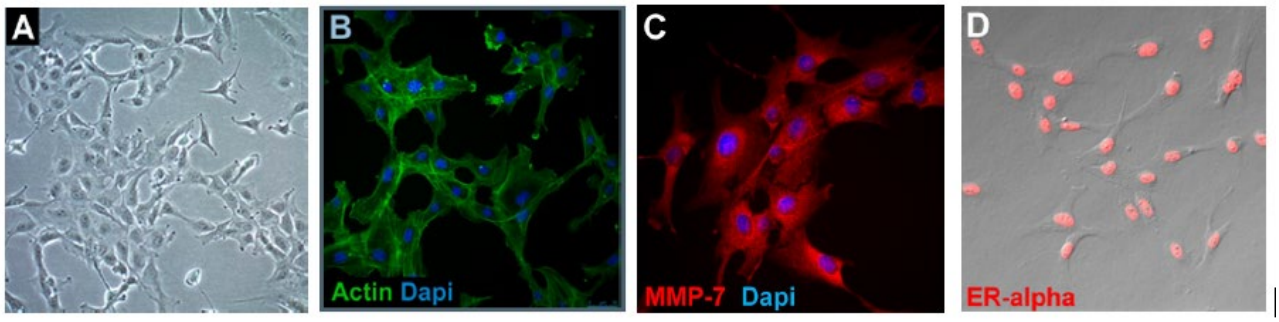

Figure 1. DOV13 cells two (**A**) days after thawing in a T75 flask. Cells express actin (**B**, Phalloidin-FITC; Cat. No. P5282), MMP-7 (**C**, MAB13414), and Estrogen receptor alpha (ER-alpha) (**D**, 06-935).

Protocols

Thawing Cells

1. Do not thaw the cells until the recommended medium is on hand. Cells can grow on normal tissue cultureware surfaces without any additional coating.

   DOV-13 Expansion Medium: Cells are thawed and expanded in RPMI-1640 (Cat. No. R8758) supplemented with 10% FBS (Cat. No. ES-009-B) and 2 mM L-glutamine (Cat. No. G7513).
2. Remove the vial of frozen DOV13 cells from liquid nitrogen and incubate in a 37 °C water bath. Closely monitor until the cells are completely thawed. Maximum cell viability is dependent on the rapid and complete thawing of frozen cells.

   IMPORTANT: Do not vortex the cells.
3. As soon as the cells are completely thawed, disinfect the outside of the vial with 70% ethanol. Proceed immediately to the next step.
4. In a laminar flow hood, use a 1- or 2-mL pipette to transfer the cells to a sterile 15 mL conical tube. Be careful not to introduce any bubbles during the transfer process.
5. Using a 10 mL pipette, slowly add dropwise 9 mL of DOV13 Expansion Medium (Step 1 above) to the 15 mL conical tube.

   IMPORTANT: Do not add the entire volume of media all at once to the cells. This may result in decreased cell viability due to osmotic shock.
6. Gently mix the cell suspension by slowly pipetting up and down twice. Be careful not to introduce any bubbles.

   IMPORTANT: Do not vortex the cells.
7. Centrifuge the tube at 300 *x g* for 2-3 minutes to pellet the cells.

8. Decant as much of the supernatant as possible. Steps 5-8 are necessary to remove residual cryopreservative (DMSO).
9. Resuspend the cells in 15 mL of DOV13 Expansion Medium.
10. Transfer the cell mixture to a T75 tissue culture flask.
11. Incubate the cells at 37 °C in a humidified incubator with 5% CO_2.

Subculturing Cells

1. Do not allow the cells to grow to confluency. DOV-13 cells should be passaged at ~80-85% confluence.
2. Carefully remove the medium from the T75 tissue culture flask containing the DOV13 cells.
3. Rinse the flask with 10 mL 1X PBS. Aspirate after the rinse.
4. Apply 5-7 mL of Accutase™ and incubate in a 37 °C incubator for 3-5 minutes.
5. Inspect the flask and ensure the complete detachment of cells by gently tapping the side of the flask with the palm of your hand.
6. Add 5-7 mL of DOV-13 Expansion Medium to the plate.
7. Gently rotate the flask to mix the cell suspension. Transfer the dissociated cells to a 15 mL conical tube.
8. Centrifuge the tube at 300 *x g* for 3-5 minutes to pellet the cells.
9. Discard the supernatant, then loosen the cell pellet by tapping the tip of the tube with a finger.
10. Apply 2-5 mL of DOV13 Expansion Medium to the conical tube and resuspend the cells thoroughly.
    IMPORTANT: Do not vortex the cells.
11. Count the number of cells using a hemocytometer.
12. Plate the cells to the desired density. Typical split ratio is 1:6.

Cryopreservation of Cells

DOV13 human ovarian carcinoma cell line may be frozen in the expansion medium plus 10% DMSO using a Nalgene® slow freeze Mr. Frosty® container.

References

1. Nat Rev Dis Primers. 2016; 2:16061.
2. Am J Obstet Gynecol. 1992; 166(2): 676-684.
3. Proc Natl Acad Sci USA.1999; 96(10): 5722-5727.
4. Int J Cancer. 2005; 114(1): 19-31.
5. J Biol Chem. 1995; 270(3): 999-1002.
6. Nucleic Acid Res. 2019; 47(D1): D941-D947.

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