Data Sheet

OVSAHO Human High-Grade Serous Ovarian Cancer Cell Line

Cancer Cell Line

SCC294

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

Ovarian cancer (OC) remains one of the leading causes of cancer-related deaths in women worldwide, with an all-stage 5-year relative survival rate across the globe of only 30–40%.[1] High-grade serous carcinoma (HGSOC) accounts for 70% of all ovarian cancers and is also one of the more lethal forms of ovarian cancer due to its rapid growth and early spread to other organs in the peritoneal cavity.[2] Ovarian cancer cell lines have historically been the most frequently used tumor models to prescreen experimental anticancer agents in vitro and to select specific histologic subtypes of epithelial OC for further exploration of these agents. Xenograft models relying on implantation of established EOC cell lines have also been extensively used in ovarian cancer research and are important experimental platforms for preclinical drug development.[3]

Source

OVSAHO is a permanent human ovarian carcinoma cell line established from the abdominal metastasis of a serious papillary adenocarcinoma patient.[4] In addition to being a reproducible in vitro HGSOC source, OVSAHO cells have been shown to be amenable to intraperitoneal and subcutaneous[4] as well as orthotopic[5] heterotransplantation in nude and even immune-competent mice. OVSAHO ranked second among 47 ovarian cancer cell lines listed in the Cancer Cell Line Encyclopedia and The Cancer Genome Atlas in having the highest genetic similarity to ovarian tumors.[6]

Short Tandem Repeat (STR Profile)

D3S1358:	15	D13S317:	8
D7S820:	8, 10	D16S539:	9
vWA:	14, 16	TH01:	6
FGA:	24	TPOX:	8, 11
D8S1179:	11, 14	CSF1PO:	10, 12
D21S11:	31	Amelogenin:	X
D18S51:	16, 20	Penta D:	9
D5S818:	12, 13	Penta E:	15

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

Quality Control Testing

- OVSAHO cells are verified to be of human origin and negative for mouse, rat, Chinese hamster, Golden Syrian hamster, and non-human primate interspecies contamination, as assessed by a Contamination Clear panel by Charles River Animal Diagnostic Services.
- Cells tested negative for infectious diseases against a Human Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells tested negative for mycoplasma.

Storage and Handling

OVSAHO cells should be stored in liquid nitrogen until use. The cells can be cultured for at least 10 passages after initial thawing without significantly affecting the cell marker expression and functionality.

Representative Data

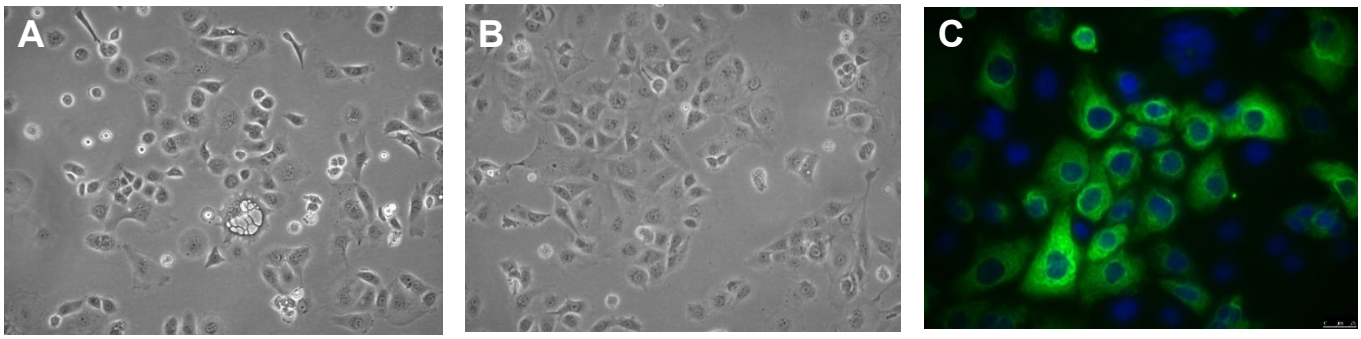

Figure 1. Bright-field images of S462 cells in culture one (A) and two days (B) after thawing in a T75 flask. Over 50% of OVSAHO cells express cytokeratin 18 (C).

Protocols

Thawing the Cells

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

   Cells are thawed and expanded in OVSAHO Expansion Medium comprising RPMI-1640 containing L-glutamine (Cat. No. R8758), and 10% FBS (Cat. No. ES-009-B).

2. Remove the vial of frozen OVSAHO 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 OVSAHO 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 OVSAHO 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 the Cells

1. Do not allow the cells to grow to confluency. OVSAHO cells should be passaged at ~ 80% confluency.
2. Carefully remove the medium from the T75 tissue culture flask containing the 80% confluent layer of OVSAHO 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 OVSAHO 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 OVSAHO Expansion Medium to the conical tube and resuspend the cells thoroughly. Large cell clumps may be broken up by gentle trituration.

    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 the cells

OVSAHO Human High-Grade Serous Ovarian Cancer Cells may be frozen in OVSAHO Expansion Medium supplemented with 10% DMSO using a Nalgene® slow freeze Mr. Frosty™ container.

References

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2. Lisio MA, Fu L, Goyeneche A, Gao ZH, Telleria C. 2019. High-grade serous ovarian cancer: basic sciences, clinical and therapeutic standpoints. *Int. J. Mol. Sci.* 20(4): 952.
3. Konstantinopoulos PA, Matulonis UA. 2013. Current Status and Evolution of Preclinical Drug Development. Models of Epithelial Ovarian Cancer. *Frontiers in Oncology* 3(1): 296.
4. Yanagibashi T, Gorai I, Nakazawa T, Miyagi E, Hirahara F, Kitamura H, Minaguchi H. 1997. Complexity of expression of the intermediate filaments of six new human ovarian carcinoma cell lines: new expression of cytokeratin 20. *Br. J. Cancer* 76: 829-835.
5. Berger J, Beck TL, Mital P, Elishaev E, Sukhwani M, Oesterreich S, Vlad A, Krivak TC, Kelley III JL, Orwig K. 2015. A novel orthotopic mouse model of epithelial ovarian carcinoma demonstrating progression from early stage disease to carcinomatosis in both immune-competent and immune-deficient models. *Gynecologic Oncology* Volume 137, Supplement 1, April 2015, Page 132 (Poster Abstract).
6. Domcke S, Sinha R, Levine DA, Sander C, Schultz N. 2014. Evaluating cell lines as tumour models by comparison of genomic profiles. *Nat. Commun.* 4:2126-2126.

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