Product sheet

Caov-3 Cells | 300319

General information

Description	Caov-3 cells are derived from the ovary of a 54-year-old Caucasian woman with adenocarcinoma, provide researchers with a representative model for high-grade ovarian cancer. The cell line was established in 1976 and has since been used in numerous studies. With their epithelial morphology, Caov-3 cells closely resemble the characteristics of primary ovarian cancer cells. When cultured, these cells form densely packed colonies that mimic the behavior observed in the human body. Their unique properties make them an ideal choice for researchers studying the growth, behavior and response of ovarian cancer cells. An important finding in this field is the effect of all-trans retinoic acid on Caov-3 cells. Studies have shown that this compound suppresses the growth of these ovarian cancer cells in vitro. In addition, Caov-3 cells express various tumor-associated antigens, including NB/70K, CA-125, Ba-2, and Ca-1, which increases their utility for research into targeted therapies and immunotherapies. The genome of Caov-3 cells exhibits significant abnormalities explaining their tumorigenic properties. For example, these cells have a nonsense mutation in the p53 tumor suppressor gene and possess multiple copies of the ovarian cancer oncogene PIK3CA, which plays a critical role in cancer development and progression. In terms of drug sensitivity, Caov-3 cells respond to several commonly used chemotherapeutic agents. Vinblastine, cisplatin and adriamycin have been shown to have an effect on these cells. Another characteristic of Caov-3 cells is their behavior under different culture conditions. While these cells do not grow in soft agar, they exhibit tumorigenic properties when injected into immunocompromised mice. Therefore, among their many applications in research, Caov-3 cells are particularly suitable for 3D cell culture experiments. Due to their epithelial morphology and ability to form dense colonies, they are the ideal choice for studying cell-cell interactions, tissue organization and behavior of ovarian cancer cells in a more physiologically relevant environment. However, the long doubling time of approximately 78 hours must be considered in experimental design.
Organism	Human
Tissue	Ovary
Disease	High grade ovarian serous adenocarcinoma
Synonyms	CaOv-3, CaOV-3, CAOV-3, CAOV3, CaOV3, CaOv3, Caov3, CA-OV-3

Characteristics

Age	54 years
Gender	Female
Ethnicity	European

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Morphology	Epithelial-like
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	Caov-3 (Cytion catalog number 300319)
Biosafety level	1

Expression / Mutation

Isoenzymes	AK-1, 1, ES-D, 1, G6PD, B, GLO-I, 1-2, Me-2, 2, PGM1, 1, PGM3, 1

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
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.
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: 10,13
D13S317: 12
D16S539: 9
D5S818: 12
D7S820: 10
TH01: 7
TPOX: 8,1
vWA: 16,18
D3S1358: 16
D21S11: 30
D18S51: 18
Penta E: 11,15
Penta D: 12
D8S1179: 9,14
FGA: 24
D6S1043: 12
D2S1338: 16,17
D12S391: 15,23
D19S433: 14,17