Caov-3

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.

Tissue	Ovary
Disease	High grade ovarian serous adenocarcinoma

Synonyms

- CaOv-3
- CaOV-3
- CAOV-3
- CAOV3
- CaOV3
- CaOv3
- Caov3
- CA-OV-3

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like

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IDENTIFIERS

Citation

Caov-3 (Cytion catalog number 300319)

NCBI TaxID	9606
Cellosaurus	CVCL_0201

EXPRESSION AND SUSCEPTIBILITY

Isoenzymes

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

HANDLING AND CULTURE

Culture medium

DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)

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

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	TrypLE Express 10 min at 37°C

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.

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	54 years
Ethnicity	European

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.

Material Transfer Agreement required	Yes