OVCAR-8

305383

GENERAL INFORMATION

Description

OVCAR-8 is a human ovarian carcinoma cell line established from a patient with advanced-stage ovarian adenocarcinoma. This cell line is particularly noted for its significant resistance to cisplatin and carboplatin, which were administered in high doses during the patient's treatment. OVCAR-8 is widely utilized in research investigating mechanisms of chemoresistance in ovarian cancer, as well as in the development of strategies to overcome resistance to platinum-based chemotherapies.
OVCAR-8 cells exhibit an epithelial morphology and grow adherently in culture. The cell line is characterized by molecular and phenotypic traits associated with high-grade ovarian cancers, including alterations in DNA damage repair mechanisms and other pathways contributing to tumor survival under chemotherapeutic stress. Unlike some other ovarian cancer cell lines, OVCAR-8 does not exhibit detectable expression of metallothionein, a protein thought to play a role in resistance to heavy metal-based drugs. However, this cell line demonstrates cross-resistance to cadmium and other agents, suggesting the involvement of alternative resistance mechanisms, such as increased glutathione levels and enhanced DNA repair capacity.
OVCAR-8 is a valuable tool in preclinical research for screening chemotherapeutic agents, evaluating targeted therapies, and studying the biology of chemoresistance. Researchers employ this cell line to explore combinations of drugs designed to sensitize resistant tumors to standard treatments. Additionally, OVCAR-8 provides insights into the genetic and molecular adaptations of ovarian cancer cells that underlie their survival and persistence despite aggressive chemotherapy regimens. Its clinical relevance and resistance profile make it an important resource for advancing ovarian cancer research and therapy development.

Tissue	Ovary
Disease	Ovarian adenocarcinoma

Synonyms

- OVCAR 8
- NIH:OVCAR-8
- OVCAR8
- Ovcar8
- OVCAR.8
- OVCA8
- OVCAR-8/EGFP_LC3

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like
Doubling time	24-32 hours

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IDENTIFIERS

Citation

OVCAR-8 (Cytion catalog number 305383)

NCBI TaxID	9606
Cellosaurus	CVCL_1629

EXPRESSION AND SUSCEPTIBILITY

Mutational profile

Mutation: CTNNB1, Simple, p.Gln26Arg (c.77A>G), Heterozygous; Mutation: ERBB2, Simple, p.Gly776Val (c.2327G>T), Heterozygous; Mutation: KRAS, Simple, p.Pro121His (c.362C>A), Heterozygous; Mutation: TP53, Simple, c.376-1G>A (p.Tyr126_Lys132del, c.376_396del21), Homozygous, Splice acceptor mutation

HANDLING AND CULTURE

Culture medium

RPMI 1640, w: 2.1 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)

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

Supplements

Supplement the medium with 10% FBS

Dissociation reagent	Accutase
Seeding density	3-4 x 10^4 cells/mL

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	64 years
Ethnicity	Caucasian

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